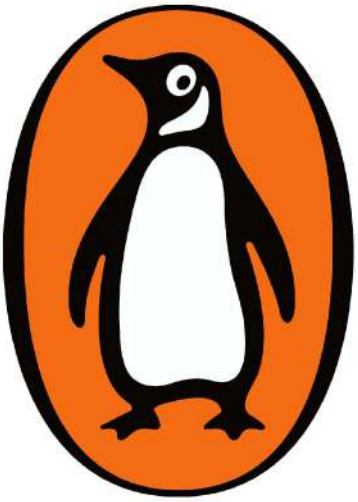
'There is no author whose books I look forward to more than Vaclav Smil' **Bill Gates**

Vaclav Smil

How The World Really Works

A Scientist's Guide to Our Past, Present and Future

'If you are anxious about the future, and infuriated that we aren't doing enough about it, please read this book' **Paul Collier**



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About the Author

Vaclav Smil is Distinguished Professor Emeritus at the University of Manitoba. He is the author of over forty books on topics including energy, environmental and population change, food production and nutrition, technical innovation, risk assessment and public policy. His most recent for Penguin was *Numbers Don't Lie*, which was published in over twenty languages. No other living scientist has had more books (on a wide variety of topics) reviewed in the leading scientific journal *Nature*. A Fellow of the Royal Society of Canada, in 2010 he was named by *Foreign Policy* as one of the Top 100 Global Thinkers.

Introduction

Why Do We Need This Book?

Every era has its claims to uniqueness, but while the experiences of the past three generations—that is, the decades since the end of the Second World War—may not have been as fundamentally transformative as those of the three generations preceding the beginning of the First World War, there has been no shortage of unprecedented events and advances. Most impressively, more people now enjoy a higher standard of living, and do so for more years and in better health, than at any time in history. Yet these beneficiaries are still a minority (only about a fifth) of the world's population, whose total count is approaching 8 billion people.

The second achievement to admire is the unprecedented expansion of our understanding of both the physical world and all forms of life. Our knowledge extends from grand generalizations about complex systems on the universal (galaxies, stars) and planetary (atmosphere, hydrosphere, biosphere) scale to processes at the level of atoms and genes: lines etched into the surface of the most powerful microprocessor are only about twice the diameter of human DNA. We have translated this understanding into a still-expanding array of machines, devices, procedures, protocols, and interventions that sustain modern civilization, and the enormity of our aggregate knowledge—and the ways we have deployed it in our service—is far beyond the comprehension of any individual mind.

You could meet real Renaissance men on Florence's Piazza Signoria in 1500—but not for too long after that. By the middle of the 18th century two French savants, Denis Diderot and Jean le Rond d'Alembert, could still gather a group of knowledgeable contributors to sum up the era's understanding in fairly exhaustive entries in their multi-volume *Encyclopédie, ou Dictionnaire raisonné des sciences, des arts et des métiers*. A few generations later the extent and the specialization of our knowledge advanced by orders of magnitude, with fundamental discoveries ranging from magnetic induction (Michael Faraday in 1831, the basis of electricity generation) to plant metabolism (Justus von Liebig, 1840, the basis of crop fertilization) to theorizing about electromagnetism (James Clerk Maxwell, 1861, the basis of all wireless communication).

In 1872, a century after the appearance of the last volume of the *Encyclopédie*, any collection of knowledge had to resort to the superficial treatment of a rapidly expanding range of topics, and, one and a half centuries later, it is impossible to sum up our understanding even within narrowly circumscribed specialties: such terms as "physics" or "biology" are fairly meaningless labels, and experts in particle physics would find it very hard to understand even the first page of a new research paper in viral immunology. Obviously, this atomization of knowledge has not made any public decision-making easier. Highly specialized branches of modern science have become so arcane that many people employed in them are forced to train until their early or mid-thirties in order to join the new priesthood.

They may share long apprenticeships, but too often they cannot agree on the best course of action. The SARS-CoV-2 pandemic made it clear that disagreements among experts may extend even to such seemingly simple decisions as wearing a face mask. By the end of March 2020 (three

months into the pandemic) the World Health Organization still advised against doing so unless a person was infected, and the reversal came only in early June 2020. How can those without any special knowledge take sides or make any sense of these disputes that now often end in retractions or the dismantling of previously dominant claims?

Still, such continuing uncertainties and disputes do not excuse the extent to which most people misunderstand the fundamental workings of the modern world. After all, appreciating how wheat is grown (chapter 2) or steel is made (chapter 3) or realizing that globalization is neither new nor inevitable (chapter 4) are not the same as asking that somebody comprehend femtochemistry (the study of chemical reactions at timescales of 10^{-15} seconds, Ahmed Zewail, Nobel Prize in 1999) or polymerase chain reactions (the rapid copying of DNA, Kary Mullis, Nobel Prize in 1993).

Why then do most people in modern societies have such a superficial knowledge about how the world really works? The complexities of the modern world are an obvious explanation: people are constantly interacting with black boxes, whose relatively simple outputs require little or no comprehension of what is taking place inside the box. This is as true of such ubiquitous devices as mobile phones and laptops (typing a simple query does the trick) as it is of mass-scale procedures such as vaccination (certainly the best planetary example of 2021, with, typically, the rolling up of a sleeve being the only comprehensible part). But explanations of this comprehension deficit go beyond the fact that the sweep of our knowledge encourages specialization, whose obverse is an increasingly shallow understanding—even ignorance—of the basics.

Urbanization and mechanization have been two important reasons for this comprehension deficit. Since the

year 2007, more than half of humanity has lived in cities (more than 80 percent in all affluent countries), and unlike in the industrializing cities of the 19th and early 20th centuries, jobs in modern urban areas are largely in services. Most modern urbanites are thus disconnected not only from the ways we produce our food but also from the ways we build our machines and devices, and the growing mechanization of all productive activity means that only a very small share of the global population now engages in delivering civilization's energy and the materials that comprise our modern world.

America now has only about 3 million men and women (farm owners and hired labor) directly engaged in producing food—people who actually plow the fields, sow the seeds, apply fertilizer, eradicate weeds, harvest the crops (picking fruit and vegetables is the most labor-intensive part of the process), and take care of the animals. That is less than 1 percent of the country's population, and hence it is no wonder that most Americans have no idea, or only some vague notion, about how their bread or their cuts of meat came to be. Combines harvest wheat—but do they also harvest soybeans or lentils? How long does it take for a tiny piglet to become a pork chop: weeks or years? The vast majority of Americans simply don't know—and they have plenty of company. China is the world's largest producer of steel—smelting, casting, and rolling nearly a billion tons of it every year—but all of that is done by less than 0.25 percent of China's 1.4 billion people. Only a tiny percentage of the Chinese population will ever stand close to a blast furnace, or see the continuous casting mill with its red ribbons of hot, moving steel. And this disconnect is the case across the world.

The other major reason for the poor, and declining, understanding of those fundamental processes that deliver energy (as food or as fuels) and durable materials (whether metals, non-metallic minerals, or concrete) is that they

have come to be seen as old-fashioned—if not outdated—and distinctly unexciting compared to the world of information, data, and images. The proverbial best minds do not go into soil science and do not try their hand at making better cement; instead they are attracted to dealing with disembodied information, now just streams of electrons in myriads of microdevices. From lawyers and economists to code writers and money managers, their disproportionately high rewards are for work completely removed from the material realities of life on earth.

Moreover, many of these data worshippers have come to believe that these electronic flows will make those quaint old material necessities unnecessary. Fields will be displaced by urban high-rise agriculture, and synthetic products will ultimately eliminate the need to grow any food at all. Dematerialization, powered by artificial intelligence, will end our dependence on shaped masses of metals and processed minerals, and eventually we might even do without the Earth's environment: who needs it if we are going to terraform Mars? Of course, these are all not just grossly premature predictions, they are fantasies fostered by a society where fake news has become common and where reality and fiction have commingled to such an extent that gullible minds, susceptible to cult-like visions, believe what keener observers in the past would have mercilessly perceived as borderline or frank delusion.

None of the people reading this book will relocate to Mars; all of us will continue to eat staple grain crops grown in soil on large expanses of agricultural land, rather than in the skyscrapers imagined by the proponents of so-called urban agriculture; none of us will live in a dematerialized world that has no use for such irreplaceable natural services as evaporating water or pollinating plants. But delivering these existential necessities will be an increasingly challenging task, because a large share of humanity lives in conditions that the affluent minority left

behind generations ago, and because the growing demand for energy and materials has been stressing the biosphere so much and so fast that we have imperiled its capability to keep its flows and stores within the boundaries compatible with its long-term functioning.

To give just a single key comparison, in 2020 the average annual per capita energy supply of about 40 percent of the world's population (3.1 billion people, which includes nearly all people in sub-Saharan Africa) was no higher than the rate achieved in both Germany and France in 1860! In order to approach the threshold of a dignified standard of living, those 3.1 billion people will need at least to double—but preferably triple—their per capita energy use, and in doing so multiply their electricity supply, boost their food production, and build essential urban, industrial, and transportation infrastructures. Inevitably, these demands will subject the biosphere to further degradation.

And how will we deal with unfolding climate change? There is now a widespread consensus that we need to do *something* to prevent many highly undesirable consequences, but what kind of action, what sort of behavioral transformation would work best? For those who ignore the energetic and material imperatives of our world, those who prefer mantras of green solutions to understanding how we have come to this point, the prescription is easy: just decarbonize—switch from burning fossil carbon to converting inexhaustible flows of renewable energies. The real wrench in the works: we are a fossil-fueled civilization whose technical and scientific advances, quality of life, and prosperity rest on the combustion of huge quantities of fossil carbon, and we cannot simply walk away from this critical determinant of our fortunes in a few decades, never mind years.

Complete decarbonization of the global economy by 2050 is now conceivable only at the cost of unthinkable global economic retreat, or as a result of extraordinarily rapid

transformations relying on near-miraculous technical advances. But who is going, willingly, to engineer the former while we are still lacking any convincing, practical, affordable global strategy and technical means to pursue the latter? What will actually happen? The gap between wishful thinking and reality is vast, but in a democratic society no contest of ideas and proposals can proceed in rational ways without all sides sharing at least a modicum of relevant information about the real world, rather than trotting out their biases and advancing claims disconnected from physical possibilities.

This book is an attempt to reduce the comprehension deficit, to explain some of the most fundamental ruling realities governing our survival and our prosperity. My goal is not to forecast, not to outline either stunning or depressing scenarios of what is to come. There is no need to extend this popular—but consistently failing—genre: in the long run, there are too many unexpected developments and too many complex interactions that no individual or collective effort can anticipate. Nor will I advocate any specific (biased) interpretations of reality, either as a source of despair or of boundless expectations. I am neither a pessimist nor an optimist; I am a scientist trying to explain how the world really works, and I will use that understanding in order to make us better realize our future limits and opportunities.

Inevitably, this kind of inquiry must be selective, but every one of the seven key topics chosen for closer examination passes the muster of existential necessity: there are no frivolous choices in the lineup. The first chapter of this book shows how our high-energy societies have been steadily increasing their dependence on fossil fuels in general and on electricity, the most flexible form of energy, in particular. Appreciation of these realities serves as a much-needed corrective to the now-common claims

(based on a poor understanding of complex realities) that we can decarbonize the global energy supply in a hurry, and that it will take only two or three decades before we rely solely on renewable energy conversions. While we are converting increasing shares of electricity generation to new renewables (solar and wind, as opposed to the long-established hydroelectricity) and putting more electric cars on the roads, decarbonizing trucking, flying, and shipping will be a much greater challenge, as will the production of key materials without relying on fossil fuels.

The second chapter of this book is about the most basic survival necessity: producing our food. Its focus is on explaining how much of what we rely on to survive, from wheat to tomatoes to shrimp, has one thing in common: it requires substantial, direct and indirect, fossil fuel inputs. Awareness of this fundamental dependence on fossil fuels leads to a realistic understanding of our continued need for fossil carbon: it is relatively easy to generate electricity by wind turbines or solar cells rather than by burning coal or natural gas—but it would be much more difficult to run all field machinery without liquid fossil fuels and to produce all fertilizers and other agrochemicals without natural gas and oil. In short, for decades it will be impossible to adequately feed the planet without using fossil fuels as sources of energy and raw materials.

The third chapter explains how and why our societies are sustained by materials created by human ingenuity, focusing on what I call the four pillars of modern civilization: ammonia, steel, concrete, and plastics. Understanding these realities exposes the misleading nature of recently fashionable claims about the dematerialization of modern economies dominated by services and miniaturized electronic devices. The relative decline of material needs per unit of many finished products has been one of the defining trends of modern industrial developments. But in absolute terms, material

demands have been rising even in the world's most affluent societies, and they remain far below any conceivable saturation levels in low-income countries where the ownership of well-built apartments, kitchen appliances, and air conditioning (to say nothing about cars) remains a dream for billions of people.

The fourth chapter is the story of globalization, or how the world has become so interconnected by transportation and communication. This historical perspective shows how old (or indeed ancient) the origins of this process are, and how recent is its highest—and finally truly global—extent. And a closer look makes it clear that there is nothing inevitable about the future course of this ambivalently perceived (much praised, much questioned, and much criticized) phenomenon. Recently, there have been some clear retreats around the world, and a general trend toward populism and nationalism, but it is not clear how far these will continue, or to what extent these changes will be modified due to a combination of economic, security, and political considerations.

The fifth chapter provides a realistic framework for judging the risks we face: modern societies have succeeded in eliminating or reducing many previously mortal or crippling risks—polio and giving birth, for example—but many perils will always be with us, and we repeatedly fail to make proper risk assessments, both underestimating and exaggerating the dangers we face. After finishing this chapter, readers will have a good appreciation of the relative risks of many common involuntary exposures and voluntary activities (from falling at home to flying between continents; from living in a hurricane-prone city to parachuting)—and, cutting through the diet industry nonsense, we will see a range of options of what we could eat to help us live longer.

The sixth chapter will look first at how unfolding environmental changes might affect our three existential

necessities: oxygen, water, and food. The rest of the chapter will focus on global warming, the change that has dominated recent environmental concerns and has led to the emergence of new—near apocalyptic—catastrophism on one hand, and complete denials of the process on the other. Instead of recounting and adjudging these contested claims (too many books have already done so), I will stress that, contrary to widespread perceptions, this is not a recently discovered phenomenon: we have understood the fundamentals of this process for more than 150 years.

Moreover, we have been aware of the actual degree of warming associated with the doubling of atmospheric CO_2 for more than a century, and we were warned about the unprecedented (and unrepeatable) nature of this planetary experiment more than half a century ago (uninterrupted, accurate measurements of CO_2 began in 1958). But we have chosen to ignore these explanations, warnings and recorded facts. Instead, we have multiplied our reliance on the combustion of fossil fuels, resulting in a dependence that will not be severed easily, or inexpensively. How rapidly we can change this remains unclear. Add to this all other environmental worries, and you must conclude that the key existential question—can humanity realize its aspirations within the safe boundaries of our biosphere?—has no easy answers. But it is imperative that we understand the facts of the matter. Only then can we tackle the problem effectively.

In the closing chapter I will look to the future, specifically at the recent opposing propensities to embrace catastrophism (those that say there are just years left before the final curtain descends on modern civilization) and techno-optimism (those that predict that the powers of invention will open unlimited horizons beyond the confines of the Earth, turning all terrestrial challenges into inconsequential histories). Predictably, I have little use for

either of these positions, and my perspective will find no favor with either doctrine. I do not foresee any imminent break with history in either direction; I do not see any already predetermined outcomes, but rather a complicated trajectory contingent on our—far from foreclosed—choices.

This book rests on two foundations: abundant scientific findings and half a century of my research and book-writing. The first includes items ranging from such classic contributions as the pioneering elucidations of energy conversions and of the greenhouse gas effect from the 19th century, through to the very latest assessments of global challenges and risk probabilities. And this far-reaching book could not have been written without my decades of interdisciplinary studies distilled in my many other books. Rather than resorting to an ancient comparison of foxes and hedgehogs (a fox knows many things, but a hedgehog knows one big thing), I tend to think about modern scientists as either the drillers of ever-deeper holes (now the dominant route to fame) or scanners of wide horizons (now a much-diminished group).

Drilling the deepest possible hole and being an unsurpassed master of a tiny sliver of the sky visible from its bottom has never appealed to me. I have always preferred to scan as far and as wide as my limited capabilities have allowed me to do. My main area of interest throughout my life has been energy studies, because a satisfactory grasp of that vast field requires you to combine an understanding of physics, chemistry, biology, geology, and engineering with an attention to history and to social, economic, and political factors.

Nearly half of my now more than 40 (and mainly more academic) books deal with various aspects of energy, from wide-ranging surveys of general energetics and energy throughout history to closer looks at individual fuel categories (oil, natural gas, biomass) and specific properties and processes (power density, energy

transitions). The rest of my output betrays my interdisciplinary quests: I have written about such fundamental phenomena as growth—in all of its natural and anthropogenic guises—and risk; about the global environment (the biosphere, biogeochemical cycles, global ecology, photosynthetic productivity, and harvests), food and agriculture, materials (above all, steel and fertilizers), technical advances, and the progress and retreat of manufacturing, and also about ancient Roman and modern American history and Japanese food.

Inevitably, this book—the product of my life's work, and written for the layperson—is a continuation of my long-lasting quest to understand the basic realities of the biosphere, history, and the world we have created. And it also does, yet again, what I have been steadfastly doing for decades: it strongly advocates for moving away from extreme views. Recent (and increasingly strident or increasingly giddy) advocates of such positions will be disappointed: this is not the place to find either laments about the world ending in 2030 or an infatuation with astonishingly transformative powers of artificial intelligence arriving sooner than we think. Instead, this book tries to provide a foundation for a more measured and necessarily agnostic perspective. I hope that my rational, matter-of-fact approach will help readers to understand how the world really works, and what our chances are of seeing it offer better prospects to the coming generations.

But before you plunge into the specific topics, I have a warning as well as a possible request. This book teems with numbers (all metric) because the realities of the modern world cannot be understood only by qualitative descriptions. Many numbers in this book are, inevitably, either very large or very small, and such realities are best treated in terms of orders of magnitude, labelled with globally valid prefixes. Should you not have a grounding in these matters, the appendix on understanding numbers,

large and small, takes care of that, and hence some readers might find it profitable to begin this book from its end. Otherwise, I'll see you in chapter 1 for a closer, quantitative look at energies. It's a perspective that should never go out of fashion.

1. Understanding Energy

Fuels and Electricity

Consider a benign science fiction scenario: not travel to distant planets in search of life, but the Earth and its inhabitants as targets of remote monitoring by an exceedingly sapient civilization that sends its probes to nearby galaxies. Why do they do this? Just for the satisfaction of systematic understanding, and perhaps also to avoid dangerous surprises should the third planet orbiting around an unremarkable star in a spiral galaxy become a threat, or perhaps in case they should require a second home. Hence this planet keeps periodic tabs on Earth.

Let us imagine that a probe approaches our planet once every 100 years and that it is programmed to make a second pass (a closer inspection) only when it detects a previously unobserved kind of energy conversion—the changing of energy from one form to another—or a new physical manifestation dependent on it. In fundamental physical terms, any process—be it rain, a volcanic eruption, plant growth, animal predation, or the growth of human sapience—can be defined as a sequence of energy conversions, and for a few hundred million years after the Earth's formation the probes would see only the same varied, but ultimately monotonous, displays of volcanic eruptions, earthquakes and atmospheric storms.

Fundamental shifts

The first microorganisms emerge nearly 4 billion years ago but passing probes do not register them, as these life forms are rare and remain hidden, associated with alkaline hydrothermal vents at the ocean's floor. The first occasion for a closer look arises as early as 3.5 billion years ago, when a passing probe records the first simple, single-celled photosynthetic microbes in shallow seas: they absorb near-infrared radiation—that which is just beyond the visible spectrum—and do not produce oxygen.[1] Hundreds of millions of years then elapse with no signs of change before cyanobacteria begin to use the energy of the visible incoming solar radiation to convert CO_2 and water into new organic compounds and release oxygen.[2]

This is a radical shift that will create Earth's oxygenated atmosphere, yet a long time elapses before new, more complex aquatic organisms are seen 1.2 billion years ago, when the probes document the rise and diffusion of brilliantly colored red algae (due to the photosynthetic pigment phycoerythrin) and of much larger, brown algae. Green algae arrive nearly half a billion years later, and because of the new proliferation of marine plants the probes get better sensors to monitor the sea floor. This pays off, as more than 600 million years ago the probes make another epochal discovery: the existence of the first organisms made of differentiated cells. These flattish, soft, bottom-dwelling creatures (known as Ediacaran fauna after their Australian domicile) are the first simple animals requiring oxygen for their metabolism and, unlike algae that are merely tossed by waves and currents, they are mobile.[3]

And then the probes begin to document what are, comparatively speaking, rapid changes: instead of passing over lifeless continents and waiting hundreds of millions of years before logging another epochal shift, they begin to record the rising, cresting, and subsiding waves of the

emergence, diffusion, and extinction of a huge variety of species. This period starts with the Cambrian explosion of small marine bottom-dwellers (541 million years ago, dominated first by trilobites) through the arrival of the first fishes, amphibians, land plants, and four-legged (and hence exceptionally mobile) animals. Periodic extinctions reduce, or sometimes almost eliminate, this variety, and even just 6 million years ago the probes do not find any organism dominating the planet.[4] Not long afterwards, the probes nearly miss the significance of a mechanical shift with enormous energetic implications: many four-legged animals briefly stand or awkwardly walk on two legs, and more than 4 million years ago this form of locomotion becomes the norm for small ape-like creatures that begin spending more time on land than in trees.[5]

Now the intervals between reporting something noteworthy to their home base shrink from hundreds of millions to mere hundreds of thousands of years. Eventually the descendants of these early bipeds (we classify them as hominins, belonging to the genus *Homo*, along the long line of our ancestors) do something that puts them on an accelerated path to planetary dominance. Several hundred thousand years ago, the probes detect the first extrasomatic use of energy—external to one's body; that is, any energy conversion besides digesting food—when some of these upright walkers master fire and begin to use it deliberately for cooking, comfort, and safety.[6] This controlled combustion converts the chemical energy of plants into thermal energy and light, enabling the hominins to eat previously hard-to-digest foods, warming them through the cold nights, and keeping away dangerous animals.[7] These are the first steps toward deliberately shaping and controlling the environment on an unprecedented scale.

This trend intensifies with the next notable change, the adoption of crop cultivation. About 10 millennia ago, the probes record the first patches of deliberately cultivated plants as a small share of the Earth's total photosynthesis becomes controlled and manipulated by humans who domesticate—select, plant, tend, and harvest—crops for their (delayed) benefit.[8] The first domestication of animals soon follows. Before that happens, human muscles are the only prime movers—that is, converters of chemical (food) energy to the kinetic (mechanical) energy of labor. Domestication of working animals, starting with cattle some 9,000 years ago, supplies the first extrasomatic energy other than that of human muscles—they are used for field work, for lifting water from wells, for pulling or carrying loads, and for providing personal transportation.[9] And much later come the first inanimate prime movers: sails, more than five millennia ago; waterwheels, more than two millennia ago; and windmills, more than a thousand years ago.[10]

Afterwards, the probes don't have much to observe, following the arrival of another period of (relative) slowdown: century after century, there is just repetition, stagnation, or the slow growth and diffusion of these long-established conversions. In the Americas and in Australia (lacking any draft animals and any simple mechanical prime movers), all work before the arrival of Europeans is done by human muscles. In some of the Old World's preindustrial regions, harnessed animals, wind and running or falling water energize significant shares of grain milling, oil pressing, grinding, and forging, and draft animals become indispensable for heavy field work (plowing above all, as harvesting is still done manually), transporting goods, and waging wars.

But at this point, even in societies with domesticated animals and mechanical prime movers, much of the work is

still done by people. My estimate, using necessarily approximate past totals of working animals and people and assuming typical daily work rates based on modern measurements of physical exertion, is that—be it at the beginning of the second millennium of the Common Era or 500 years later (in 1500, at the beginning of the early modern era)—more than 90 percent of all useful mechanical energy was provided by animate power, roughly split between people and animals, while all thermal energy came from the combustion of plant fuels (mostly wood and charcoal, but also straw and dried dung).

And then in 1600 the alien probe will spring into action, and spot something unprecedented. Rather than relying solely on wood, an island society is increasingly burning coal, a fuel produced by photosynthesis tens or hundreds of millions of years ago and fossilized by heat and pressure during its long underground storage. The best reconstructions show that coal as a heat source in England surpasses the use of biomass fuels around 1620 (perhaps even earlier); by 1650 the burning of fossil carbon supplies two-thirds of all heat; and the share reaches 75 percent by 1700.[11] England has an exceptionally early start: all the coalfields that make the UK the world's leading 19th-century economy are already producing coal before 1640.[12] And then, at the very beginning of the 18th century, some English mines begin to rely on steam engines, the first inanimate prime movers powered by the combustion of fossil fuel.

These early engines are so inefficient that they can be deployed only in mines where the fuel supply is readily available and does not require any transportation.[13] But for generations the UK remains the most interesting nation to the alien probe because it is an exceptional early adopter. Even by 1800, the combined coal extraction in a

few European countries and the United States is a small fraction of British production.

By 1800 a passing probe will record that, across the planet, plant fuels still supply more than 98 percent of all heat and light used by the dominant bipeds, and that human and animal muscles still provide more than 90 percent of all mechanical energy needed in farming, construction, and manufacturing. In the UK, where James Watt introduced an improved steam engine during the 1770s, the Boulton & Watt company begin to build engines whose average power is equal to that of 25 strong horses, but by 1800 they have sold less than 500 of these machines, merely denting the total power provided by harnessed horses and hard-working laborers.[14]

Even by 1850, rising coal extraction in Europe and North America supplies no more than 7 percent of all fuel energy, nearly half of all useful kinetic energy comes from draft animals, about 40 percent from human muscles, and just 15 percent from the three inanimate prime movers: waterwheels, windmills, and the slowly spreading steam engines. The world of 1850 is much more akin to the world of 1700 or even of 1600 than that of the year 2000.

But by 1900 the global share of both fossil and renewable fuels and of prime movers shifts considerably as modern energy sources (coal and some crude oil) provide half of all primary energy, and traditional fuels (wood, charcoal, straw) the other half. Water turbines in hydro stations generate the first primary electricity during the 1880s; later comes geothermal electricity, and after the Second World War nuclear, solar, and wind electricity (the new renewables). But by 2020 more than half of the world's electricity will still be generated by the combustion of fossil fuels, mainly coal and natural gas.

By 1900, inanimate prime movers supply about half of all mechanical energy: coal-fired steam engines make the

greatest contribution, followed by better-designed waterwheels and new water turbines (first introduced during the 1830s), windmills and brand-new steam turbines (since the late 1880s), and internal combustion engines (gasoline-fueled, also first introduced in the 1880s).[15]

By 1950, fossil fuels supply nearly three-quarters of primary energy (still dominated by coal), and inanimate prime movers—now with gasoline- and diesel-fueled internal combustion engines in the lead—provide more than 80 percent of all mechanical energy. And by the year 2000 only poor people in low-income countries depend on biomass fuels, with wood and straw providing only about 12 percent of the world's primary energy. Animate prime movers hold only a 5 percent share of mechanical energy, as human exertions and the work of draft animals are almost completely displaced by machines fueled by liquids or by electric motors.

During the past two centuries, the alien probes will have witnessed a rapid global substitution of primary energy sources, accompanied by the expansion and diversification of fossil energy supply, and the no less rapid introduction, adoption, and growth in capacity of new inanimate prime movers—first coal-fired steam engines, then internal combustion engines (piston and turbines). The most recent visit would see a truly global society built and defined by mass-scale, stationary, and mobile conversions of fossil carbon, deployed everywhere but in some of the planet's uninhabited regions.

Modern energy uses

What difference has this mobilization of extrasomatic energies made? Global primary energy supply usually refers to total (gross) production, but it is more revealing to look at energy that is actually available for conversion into

useful forms. To do this, we need to subtract pre-consumption losses (during coal sorting and cleaning, crude oil refining, and natural gas processing), non-energy use (mainly as feedstocks for chemical industries, and also as lubricating oils for machines ranging from pumps to aircraft turbines and as paving materials), and losses during electricity transmission. With these adjustments—and rounding heavily to avoid impressions of unwarranted accuracy—my calculations show a 60-fold increase in the use of fossil fuels during the 19th century, a 16-fold gain during the 20th century, and about a 1,500-fold increase over the past 220 years.[16]

This increasing dependence on fossil fuels is the most important factor in explaining the advances of modern civilization—and also our underlying concerns about the vulnerability of their supply and the environmental impacts of their combustion. In reality, the energy gain was substantially higher than the 1,500-fold I just mentioned, because we must take into account the concurrent increase in average conversion efficiencies.[17] In 1800, coal combustion in stoves and boilers to produce heat and hot water was no more than 25–30 percent efficient, and only 2 percent of coal consumed by steam engines was converted into useful work, resulting in an overall conversion efficiency of no higher than 15 percent. A century later, better stoves, boilers, and engines raised the overall efficiency to nearly 20 percent, and by the year 2000 the mean conversion rate was about 50 percent. Consequently, the 20th century saw a nearly 40-fold gain in useful energy; since 1800 the gain was about 3,500-fold.

To get an even clearer picture of the magnitude of these changes, we should express these rates in per capita terms. The global population rose from 1 billion in 1800 to 1.6 billion in 1900 and 6.1 billion in the year 2000, and hence the supply of useful energy rose (all values in gigajoules

per capita) from 0.05 in 1800 to 2.7 in 1900 and to about 28 in the year 2000. China's post-2000 rise on the world stage was the main reason for a further increase in the global rate to about 34 GJ/capita by 2020. An average inhabitant of the Earth nowadays has at their disposal nearly 700 times more useful energy than their ancestors had at the beginning of the 19th century.

Moreover, within a lifetime of people born just after the Second World War the rate had more than tripled, from about 10 to 34 GJ/capita between 1950 and 2020. Translating the last rate into more readily imaginable equivalents, it is as if an average Earthling has every year at their personal disposal about 800 kilograms (0.8 tons, or nearly six barrels) of crude oil, or about 1.5 tons of good bituminous coal. And when put in terms of physical labor, it is as if 60 adults would be working non-stop, day and night, for each average person; and for the inhabitants of affluent countries this equivalent of steadily laboring adults would be, depending on the specific country, mostly between 200 and 240. On average, humans now have unprecedented amounts of energy at their disposal.

The consequences of this in terms of human exertion, hours of physical labor, time for leisure, and the overall standard of living are obvious. An abundance of useful energy underlies and explains all the gains—from better eating to mass-scale travel; from mechanization of production and transport to instant personal electronic communication—that have become norms rather than exceptions in all affluent countries. Recent changes on a national scale range widely: as expected, they are lower for those high-income countries whose per capita energy use was already relatively high a century ago, with a greater increase in nations that have seen the most rapid modernization of their economies since 1950, most notably Japan, South Korea, and China. Between 1950 and 2020 the United States roughly doubled the per capita useful energy

provided by fossil fuels and primary electricity (to about 150 gigajoules); in Japan the rate had more than quintupled (to nearly 80 GJ/capita), and China saw an astounding, more than 120-fold, increase (to nearly 50 GJ/capita).[18]

Tracing the trajectory of useful energy deployment is so revealing because energy is not just another component in the complex structures of the biosphere, human societies, and their economies, nor just another variable in intricate equations determining the evolution of these interacting systems. Energy conversions are the very basis of life and evolution. Modern history can be seen as an unusually rapid sequence of transitions to new energy sources, and the modern world is the cumulative result of their conversions.

Physicists were the first to recognize the fundamental importance of energy in human affairs. In 1886, Ludwig Boltzmann, one of the founders of thermodynamics, spoke about free energy—energy available for conversions—as the *Kampfobjekt* (the object of struggle) for life, which is ultimately dependent on incoming solar radiation.[19] Erwin Schrödinger, winner of the Nobel Prize in Physics in 1933, summed up the basis of life: "What an organism feeds upon is negative entropy" (negative entropy or negentropy = free energy).[20] During the 1920s, following this fundamental insight of 19th- and early 20th-century physicists, the American mathematician and statistician Alfred Lotka concluded that those organisms that best capture the available energy hold the evolutionary advantage.[21]

In the early 1970s, American ecologist Howard Odum explained how "all progress is due to special power subsidies, and progress evaporates whenever and wherever they are removed."[22] And, more recently, physicist Robert Ayres has repeatedly stressed in his writings the central notion of energy in all economies: "the economic system is

essentially a system for extracting, processing and transforming energy as resources into energy embodied in products and services."[23] Simply put, energy is the only truly universal currency, and nothing (from galactic rotations to ephemeral insect lives) can take place without its transformations.[24]

Given all of these readily verifiable realities, it is hard to understand why modern economics, that body of explanations and precepts whose practitioners exercise more influence on public policy than any other experts, has largely ignored energy. As Ayres noted, economics does not only lack any systematic awareness of energy's importance for the physical process of production, but it assumes "that energy doesn't matter (much) because the cost share of energy in the economy is so small that it can be ignored … as if output could be produced by labor and capital alone—or as if energy is merely a form of man-made capital that can be produced (as opposed to extracted) by labor and capital."[25]

Modern economists do not get their rewards and awards for being preoccupied with energy, and modern societies become concerned about it only when the supply of any main commercial form of energy appears to be threatened and its prices soar. Google's Ngram Viewer, a tool that allows you to see the popularity of terms that appeared in printed sources between 1500 and 2019, illustrates this point: during the 20th century the frequency of the term "energy price" remained quite negligible, until a sudden spike that began in the early 1970s (caused by OPEC's quintupling of crude oil prices; details of which follow later in this chapter) and peaked in the early 1980s. Once prices fell, a similarly steep decline followed, and by 2019 the term "energy price" was mentioned no more frequently than it was in 1972.

Understanding how the world really works cannot be done without at least a modicum of energy literacy. In this chapter I will first explain that energy may not be easy to define but that it is easy not to make the commonly encountered error of conflating it with power. We'll see how different forms of energy (with their specific advantages and drawbacks) and different energy densities (energy stored per unit of mass or volume, critical for energy storage and portability) have affected different stages of economic development, and I'll offer some realistic appraisals of the challenges faced by the unfolding transition to societies relying less and less on fossil carbon. As we'll see, our civilization is so deeply reliant on fossil fuels that the next transition will take much longer than most people think.

What is energy?

How do we define this fundamental quantity? The Greek etymology is clear. Aristotle, writing in his *Metaphysics*, combined *ἐν* (in) with *ἔργνο* (work) and concluded that every object is maintained by *ἐνέργεια*.[26] This understanding endowed all objects with the potential for action, motion, and change—not a bad characterization of a potential to be transformed into other forms, be it by lifting, throwing, or burning.

Little changed over the following two millennia. Eventually, Isaac Newton (1643–1727) laid down fundamental physical laws involving mass, force, and momentum, and his second law of motion made it possible to derive the basic energy units. Using modern scientific units, 1 joule is the force of 1 newton—that is, the mass of 1 kilogram accelerated by 1 m/s^2 acting over a distance of 1 meter.[27] But this definition refers only to kinetic

(mechanical) energy, and it certainly does not provide an intuitive understanding of energy in all of its forms.

Our practical understanding of energy was greatly expanded during the 19th century thanks to the era's proliferating experiments with combustion, heat, radiation, and motion.[28] This led to what is still the most common definition of energy: "the capacity for doing work"—a definition valid only when the term "work" means not only some invested labor but, as one of the leading physicists of the era put it, a generalized physical "act of producing a change of configuration in a system in opposition to a force which resists that change."[29] But that, too, is still too Newtonian to be intuitive.

There is no better way to answer the question "what is energy?" than by referring to one of the most insightful physicists of the 20th century—to the protean mind of Richard Feynman, who (in his famous *Lectures on Physics*) tackled the challenge in his straightforward manner, stressing that "energy has a large number of *different forms*, and there is a formula for each one. These are: gravitational energy, kinetic energy, heat energy, elastic energy, electrical energy, chemical energy, radiant energy, nuclear energy, mass energy."

And then comes this disarming but indubitable conclusion:

> It is important to realize that in physics today, we have no knowledge of what energy *is*. We do not have a picture that energy comes in little blobs of a definite amount. It is not that way. However, there are formulas for calculating some numerical quantity, and when we add it all together it gives … always the same number. It is an abstract thing in that it does not tell us the mechanism or the *reasons* for the various formulas.[30]

And so it has been. We can use formulas to calculate, very accurately, the kinetic energy of a moving arrow or of a cruising jetliner, or the potential energy of a massive boulder that is just about to tumble down from a mountain, or the thermal energy released by a chemical reaction, or the light (radiant) energy of a flickering candle or a pointed laser—but we cannot reduce these energies into a single, easily described entity in our mind.

But the slippery nature of energy has not troubled the armies of instant experts: ever since the early 1970s, when energy became a major topic of public discourse, they have opined on energy matters with ignorance and zeal. Energy is among the most elusive and most misunderstood concepts, and a poor grasp of basic realities has led to many illusions and delusions. As we have seen, energy exists in various forms, and to make it useful to us we need to convert one form of it into another type. But treating this multifaceted abstract as a monolith has been the norm, as if different forms of energy were effortlessly substitutable.

Some of these substitutions are both relatively easy and beneficial. Replacing candles (the chemical energy of wax transformed into radiant energy) with electric lights powered by electricity generated by steam turbines (the chemical energy of fuels transformed first into heat and then into electric energy, which is then transformed into radiant energy) resulted in many obvious benefits (a safer, brighter, cheaper, more reliable kind of energy). Replacing steam- and diesel-powered railroad engines with electric drive has allowed less expensive, cleaner, and faster transportation: all sleek, high-speed trains are electric. But many desirable substitutions remain more expensive, or possible but realistically unaffordable for some time to come, or impossible at required scales—no matter how loudly their promoters extol their virtues.

Electric cars are a common example of the first category: now readily available, the best models are quite reliable,

but in 2020 they were still more expensive than similarly sized vehicles powered by internal combustion engines. In terms of the second category, as I will detail in the next chapter, synthesis of the ammonia needed to produce nitrogenous fertilizers now depends heavily on natural gas as the source of hydrogen. Hydrogen could be produced by the decomposition (electrolysis) of water instead, but this route remains nearly five times as expensive as when the element is derived from abundant and inexpensive methane—and we have yet to create a mass-scale hydrogen industry. And long-distance electricity-powered commercial flight (equivalent to a kerosene-powered Boeing 787 from New York to Tokyo) is the outstanding example of the last category: as we will see, this is an energy conversion that will remain unrealistic for a long time to come.

The first law of thermodynamics states that no energy is ever lost during conversions: be that chemical to chemical when digesting food; chemical to mechanical when moving muscles; chemical to thermal when burning natural gas; thermal to mechanical when rotating a turbine; mechanical to electrical in a generator; or electrical to electromagnetic as light illuminates the page you are reading. However, all energy conversions eventually result in dissipated low-temperature heat: no energy has been *lost*, but its utility, its ability to perform useful work, is gone (the second law of thermodynamics).[31]

All forms of energy can be measured in the same units—joule is the scientific unit; calories are often used in nutritional studies. In the next chapter, when I detail the massive energy subsidies going into modern food production, we will encounter the truly existential reality of different energy qualities. Producing chicken requires energies whose total is several times higher than the energy content of the edible meat. Although we can calculate the subsidy ratio in terms of energy quantities

(joules in/joules out)—there is, obviously, a fundamental difference between inputs and outputs: we cannot digest diesel oil or electricity, while lean chicken meat is an almost perfectly digestible foodstuff containing high-quality protein, an indispensable macronutrient that cannot be replaced by an equal amount of energy from lipids or carbohydrates.

There are many choices available when it comes to energy conversions, some far better than others. The high densities of chemical energy in kerosene and diesel fuel are great for intercontinental flying and shipping, but if you want your submarine to stay submerged while crossing the Pacific Ocean then the best choice is to fission enriched uranium in a small reactor in order to produce electricity.[32] And back on land, large nuclear reactors are the most reliable producers of electricity: some of them now generate it 90–95 percent of the time, compared to about 45 percent for the best offshore wind turbines and 25 percent for photovoltaic cells in even the sunniest of climates—while Germany's solar panels produce electricity only about 12 percent of the time.[33]

This is simple physics or electrical engineering, but it is remarkable how often these realities are ignored. Another common mistake is to confuse energy with power, and this is done even more frequently. It betrays an ignorance of basic physics, and one that, regrettably, is not limited to lay usage. Energy is a scalar, which in physics is a quantity described only by its magnitude; volume, mass, density, time, and speed are other ubiquitous scalars. Power measures energy per unit of time and hence it is a rate (in physics, a rate measures change, commonly per time). Establishments that generate electricity are commonly called power plants—but power is simply the rate of energy production or energy use. Power equals energy divided by time: in scientific units, it is watts = joules/seconds. Energy

equals power multiplied by time: joules = watts × seconds. If you light a small votive candle in a Roman church, it might burn for 15 hours, converting the chemical energy of wax to heat (thermal energy) and light (electromagnetic energy) with an average power of nearly 40 watts.[34]

Unfortunately, even engineering publications often write about a “power station generating 1,000 MW of electricity,” but that is impossible. A generating station may have installed (rated) power of 1,000 megawatts—that is, it can produce electricity at that rate—but when doing so it would generate 1,000 megawatt-hours or (in basic scientific units) 3.6 trillion joules in an hour (1,000,000,000 watts × 3,600 seconds). Analogically, an adult man’s basal metabolic rate (the energy required at complete rest to run the body’s essential functions) is about 80 watts, or 80 joules per second; lying prone all day a 70-kilogram man would still need about 7 megajoules (80 × 24 × 3,600) of food energy, or about 1,650 kilocalories, to maintain his body temperature, energize his beating heart, and run myriad enzymatic reactions.[35]

Most recently, a poor understanding of energy has the proponents of a new green world naively calling for a near-instant shift from abominable, polluting, and finite fossil fuels to superior, green and ever-renewable solar electricity. But liquid hydrocarbons refined from crude oil (gasoline, aviation kerosene, diesel fuel, residual heavy oil) have the highest energy densities of all commonly available fuels, and hence they are eminently suitable for energizing all modes of transportation. Here is a density ladder (all rates in gigajoules per ton): air-dried wood, 16; bituminous coal (depending on quality), 24–30; kerosene and diesel fuels, about 46. In volume terms (all rates in gigajoules per cubic meter), energy densities are only about 10 for wood, 26 for good coal, 38 for kerosene. Natural gas (methane)

contains only 35 MJ/m^3—or less than 1/1,000 of kerosene's density.[36]

The implications of energy density—as well as of fuel's physical properties—for transport are obvious. Ocean liners powered by steam engines did not burn wood because, everything else being equal, firewood would have taken up 2.5 times the volume of the good bituminous coal required for a transatlantic crossing (and be at least 50 percent heavier), greatly reducing the ship's capacity to transport people and goods. There could be no natural gas–powered flight, as the energy density of methane is three orders of magnitude lower than that of aviation kerosene, and also no coal-powered flight—the density difference is not that large, but coal would not flow from wing tanks to engines.

And the advantages of liquid fuels go far beyond high energy density. Unlike coal, crude oil is much easier to produce (no need to send miners underground or scar landscapes with large open pits), store (in tanks or underground—because of oil's much higher energy density, any enclosed space can typically store 75 percent more energy as a liquid fuel than as coal), and distribute (intercontinentally by tankers and by pipelines, the safest mode of long-distance mass transfer), and hence it is readily available on demand.[37] Crude oil needs refining to separate the complex mixture of hydrocarbons into specific fuels—gasoline being the lightest; residual fuel oil the heaviest—but this process yields more valuable fuels for specific uses, and it also produces indispensable non-fuel products such as lubricants.

Lubricants are needed to minimize friction in everything from the massive turbofan engines in wide-body jetliners to miniature bearings.[38] Globally, the automotive sector, now with more than 1.4 billion vehicles on the road, is the largest consumer, followed by use in industry—with the largest markets being textiles, energy, chemicals, and food

processing—and in ocean-going vessels. Annual use of these compounds now surpasses 120 megatons (for comparison, global output of all edible oils, from olive to soybean, is now about 200 megatons a year), and because the available alternatives—synthetic lubricants made from simpler, but still often oil-based, compounds rather than those derived directly from crude oil—are more expensive, this demand will grow further as these industries expand around the world.

Another product derived from crude oil is asphalt. Global output of this black and sticky material is now on the order of 100 megatons, with 85 percent of it going to paving (hot and warm asphalt mixes) and most of the rest to roofing.[39] And hydrocarbons have yet another indispensable non-fuel use: as feedstocks for many different chemical syntheses (dominated by ethane, propane, and butane from natural gas liquids) producing a variety of synthetic fibers, resins, adhesives, dyes, paints and coatings, detergents, and pesticides, all vital in myriad ways to our modern world.[40] Given these advantages and benefits, it was predictable—indeed unavoidable—that our dependence on crude oil would grow once the product became more affordable and once it could be reliably delivered on a global scale.

The shift from coal to crude oil took generations to accomplish. Commercial crude oil extraction began during the 1850s in Russia, Canada, and the US. The wells, drilled using the ancient percussion method involving the raising and dropping of a heavy cutting bit, were shallow, their daily productivities were low, and kerosene for lamps (which displaced whale oil and candles) was the main product of the simple refining of crude oil.[41] New markets for refined oil products were created only with the widespread adoption of internal combustion engines: first the gasoline-fueled (Otto cycle) machines for cars, buses, and trucks; then Rudolf Diesel’s more efficient machines,

fueled by a heavier and cheaper fraction (you guessed it, diesel) and used above all for ships, trucks, and heavy machinery (for much more on this, see chapter 4 on globalization). Diffusion of these new prime movers was slow, and the US and Canada were the only two countries with high rates of car ownership prior to the Second World War.

Crude oil became a global fuel, and eventually the world's most important source of primary energy, thanks to the discoveries of giant oil fields in the Middle East and in the USSR—and, of course, also thanks to the introduction of large tankers. Some Middle Eastern giants were first drilled in the 1920s and 1930s (Iranian Gachsaran and Iraqi Kirkuk in 1927, Kuwaiti Burgan in 1937) but most of them were discovered after the war, including Ghawar (the world's largest) in 1948, Safaniya in 1951, and Manifa in 1957, all in Saudi Arabia. The largest Soviet discoveries were in 1948 (Romashkino in the Volga-Ural Basin) and in 1965 (Samotlor in Western Siberia).[42]

Crude oil's rise and relative retreat

Mass-scale car usage in Europe and Japan and the concurrent conversion of their economies from coal to crude oil, and later to natural gas, began only during the 1950s, as did the expansion of foreign trade and travel (including the first jetliners) and the use of petrochemical feedstocks for the synthesis of ammonia and plastics. Global oil extraction of crude oil doubled during the 1950s, and by 1964 crude oil surpassed coal as the world's most important fossil fuel, but although its output kept on rising, supply remained plentiful and so prices were falling. In constant (inflation-adjusted) monies, the world oil price was lower in 1950 than it was in 1940, lower in 1960 than in 1950—and lower still in 1970 than in 1960.[43]

Not surprisingly, demand was coming from all sectors. In real terms, crude oil was so cheap that there were no incentives to use it efficiently: American houses in regions with a cold climate, increasingly heated by oil furnaces, were built with single-glazed windows and without adequate wall insulation; the average efficiency of American cars actually declined between 1933 and 1973; and energy-intensive industries continued to operate by using inefficient processes.[44] Perhaps most notably, America's pace of replacing old open-hearth furnaces with superior oxygen furnaces to make steel was much slower than in Japan and Western Europe.

During the late 1960s, the already high American demand for oil rose by nearly 25 percent, and global demand increased by nearly 50 percent. European demand had nearly doubled between 1965 and 1973, and Japanese imports became about 2.3 times higher.[45] As mentioned, new discoveries of oil covered this surge in demand and oil was selling at what was essentially the same price as in 1950. This was too good to last, however. In 1950 the US still produced about 53 percent of the world's oil; by 1970, although still the largest producer, its share fell to less than 23 percent—and it was clear that the country would need increased imports—while the Organization of the Petroleum Exporting Countries (OPEC) produced 48 percent.

OPEC, set up in 1960 in Baghdad by just five countries in order to prevent further price reductions, had time on its side: it wasn't large enough to assert itself during the 1960s, but by 1970 its production share, combined with the retreat of American extraction (which peaked in 1970), made it impossible to ignore its demands.[46] In April 1972 the Texas Railroad Commission lifted its limits on the state's output and hence surrendered its control of the price that it had held since the 1930s. In 1971, Algeria and Libya began to nationalize their oil production, and Iraq

followed in 1972, the same year that Kuwait, Qatar, and Saudi Arabia began their gradual takeover of their oilfields —which until that point had been in the hands of foreign corporations. Then in April 1973, the US ended its limits on the import of crude oil east of the Rocky Mountains. Suddenly, it was a sellers' market, and on October 1 1973 OPEC raised its posted price by 16 percent to $3.01/barrel, followed by an additional 17 percent rise by six Arab Gulf states and, after the Israeli victory over Egypt in Sinai in October 1973, it embargoed all oil exports to the US.

On January 1 1974, the Gulf states raised their posted price to $11.65/barrel, completing a 4.5-fold rise in the cost of this essential energy source in a single year—and this ended the era of rapid economic expansion that had been energized by cheap oil. From 1950 to 1973 the Western European economic product had nearly tripled, and the US GDP had more than doubled in that single generation. Between 1973 and 1975 the global economic growth rate dropped by about 90 percent, and as soon as the economies affected by higher oil prices began to adjust to these new realities—above all by impressive improvements in industrial energy efficiency—the fall of the Iranian monarchy and the takeover of Iran by a fundamentalist theocracy led to a second wave of oil price rises, from about $13 in 1978 to $34 in 1981, and to another 90 percent decline in the global rate of economic growth between 1979 and 1982.[47]

More than $30 a barrel was a demand-destroying price and by 1986 oil was again selling at just $13 a barrel, setting the stage for yet another round of globalization—this time centered on China, whose rapid modernization was driven by Deng Xiaoping's economic reforms and by massive foreign investment. Two generations later, only those who lived through those years of price and supply turmoil (or those, increasingly few, who studied their

impact) appreciate how traumatic these two waves of price rises were. Consequences of the resulting economic reversals are still felt four decades later, because once demand for oil began to increase, many oil-saving measures remained in place and some—notably the transitions to more efficient industrial uses—kept on intensifying.[48]

In 1995, crude oil extraction finally surpassed the 1979 record and then continued to rise, meeting the demand of an economically reforming China as well as the rising demand elsewhere in Asia—but oil has not regained its pre-1975 relative dominance.[49] Its share of the global commercial primary energy supply fell from 45 percent in 1970 to 38 percent in the year 2000 and to 33 percent in 2019—and it is now certain that its further relative decline will continue as natural gas consumption and wind and solar electricity generation keep increasing. There are enormous opportunities to generate more electricity with photovoltaic cells and wind turbines, but there is a fundamental difference between systems that derive 20–40 percent of electricity from these intermittent sources (Germany and Spain are the best examples among large economies) and a national electricity supply that relies completely on these renewable flows.

In large, populous nations, the complete reliance on these renewables would require what we are still missing: either mass-scale, long-term (days to weeks) electricity storage that would back up intermittent electricity generation, or extensive grids of high-voltage lines to transmit electricity across time zones and from sunny and windy regions to major urban and industrial concentrations. Could these new renewables produce enough electricity to replace not only today’s generation fueled by coal and natural gas, but also all the energy now supplied by liquid fuels to vehicles, ships, and planes by way of a complete electrification of transport? And could

they really do so, as some plans now promise, in a matter of just two or three decades?

The many advantages of electricity

If energy, according to Feynman, is “that abstract thing,” then electricity is one of its most abstract forms. You don’t need a scientific understanding to have direct experience of several different types of energy, to distinguish their forms and take advantage of their conversions. Solid or liquid fuels (chemical energy) are tangible (a tree trunk, a lump of coal, a canister of gasoline), and their burning—be it in forest fires, in Paleolithic caves, in locomotives to produce steam, or in motor vehicles—releases heat (thermal energy). Falling and running waters are ubiquitous displays of gravitational and kinetic energy that are fairly easily converted to useful kinetic (mechanical) energy by building simple wooden waterwheels—and all it takes to convert wind’s kinetic energy into mechanical energy for grinding grain or pressing oil seeds is a windmill and wooden gears to transfer the motion to millstones.

In contrast, electricity is intangible and we can’t get an intuitive sense of it in the same way as we do with fuels. But its effects can be seen in static electricity, sparks, lightning; small currents can be felt, and currents above 100 milliamperes may be deadly. Common definitions of electricity are not instinctively accessible, they require a prior knowledge of other functional terms such as “electrons,” “flow,” “charge,” and “current.” Although Feynman, in the opening volume of his magisterial *Lectures on Physics*, was quite perfunctory—“there is electrical energy, which has to do with pushing and pulling by electric charges”—when he returned to the topic in detail in the second volume, dealing with mechanical and

electrical energies and with steady currents, he did so by deploying calculus.[50]

For most of its inhabitants, the modern world is full of black boxes, devices whose internal workings remain—to different degrees—a mystery to their users. Electricity can be thought of as a ubiquitous and ultimate black box system: although many people have a fairly good understanding of what goes in (combustion of fossil fuel in a large thermal plant; falling water in a hydro station; solar radiation absorbed by a photovoltaic cell; the splitting of uranium in a reactor) and everybody benefits from what comes out (light, heat, motion), only a minority fully understand what goes on inside the generating plants, transformers, transmission lines, and final-use devices.

Lightning, electricity's most common natural demonstration, is too powerful, too short-lived (only a fraction of a second), and too destructive to be (ever?) tapped for productive use. And while anybody can produce minute quantities of static electricity by rubbing suitable materials or use small batteries that can last, without recharging, for hours of light-duty service in flashlights and portable electronics, generating electricity for mass-scale commercial use is a costly and complicated undertaking. Its distribution from where it is generated to the places and regions of its largest use—to cities, industries, and electrified forms of rapid transportation—is equally complicated: it requires transformers and extensive grids of high-voltage transmission lines and, after further transformation, distribution by low-voltage overhead or underground wires to billions of consumers.

And even in this era of high-tech electronic miracles, it is still impossible to store electricity affordably in quantities sufficient to meet the demand of a medium-sized city (500,000 people) for only a week or two, or to supply a megacity (more than 10 million people) for just half a

day.[51] But despite these complications, high costs, and technical challenges, we have been striving to electrify modern economies, and this quest for ever-higher electrification will continue because this form of energy combines many unequaled advantages. Most obviously, at the point of its final consumption, electricity's use is always effortless and clean, and the majority of the time it is also exceptionally efficient. With just the flip of a switch, push of a button, or adjustment of a thermostat (now often requiring only a hand signal or voice command), electric lights and motors or electric heaters and coolers are turned on—with no bulky fuel storages, no laborious carrying and stoking, no dangers of incomplete combustion (emitting poisonous carbon monoxide), and no cleaning of lamps or stoves or furnaces.

Electricity is the best form of energy for lighting: it has no competitor on any scale of private or public illumination, and very few innovations have produced such an impact on modern civilization as has the ability to remove the limits of daylight and to illuminate the night.[52] All previous alternatives, from ancient wax candles and oil lamps to early industrial gas lights and kerosene cylinders, were feeble, costly, and highly inefficient. The most telling comparison of light sources is in terms of their luminous efficacy—their ability to produce a visual signal, measured as the quotient of the total luminous flux (the total amount of energy put out by a source, in lumens) and the source's power (in watts). When setting the luminous efficacy of candles as equal to 1, coal gas lights in the early industrial cities produced 5–10 times more; before the First World War electric light bulbs with tungsten filaments emitted up to 60 times more; today's best fluorescent lights produce about 500 times as much; and sodium lamps (used for outdoor lighting) are up to 1,000 times more efficacious.[53]

It is impossible to decide which class of electricity converters has had a greater impact—lights or motors. The conversion of electricity into kinetic energy by electric motors first revolutionized nearly every sector of industrial production and later penetrated every household niche. Less demanding manual tasks and those that deployed steam engines to lift, press, cut, weave, and other industrial operations were almost completely electrified. In the US this took place within just four decades after the introduction of the first AC electric motors.[54] By 1930, electric drive had nearly doubled American manufacturing productivity, and had done so again by the late 1960s.[55] Concurrently, electric motors began their gradual conquest of rail transportation, beginning with electric streetcars and then with passenger trains.

The service sector now dominates all modern economies, and its operation is completely dependent on electricity. Electric motors power elevators and escalators, air-condition buildings, open doors, and compact garbage. They are also indispensable for e-commerce, as they power mazes of conveyor belts in giant warehouses. But the most ubiquitous units are never seen by people who rely on them every day. They are the tiny units activating mobile phone vibrators: the smallest ones measure less than 4 mm × 3 mm, their width being less than half the width of an average adult's pinky nail. You can see one only by dismantling your phone, or watching a video of that operation online.[56]

In some countries, virtually all rail transport is now electrified, and all high-speed trains (up to 300 km/h) are powered either by electric locomotives or by motors mounted in multiple locations, as is the case with Japan's pioneering Shinkansen launched in 1964.[57] And even basic car models now have between 20 and 40 small electric motors, with many more in expensive cars—adding to the

vehicle’s weight and increasing the drain on its batteries.[58] In households, besides lighting and powering all electronic devices—now commonly including security systems—electricity dominates mechanical tasks and supplies both heat and refrigeration in kitchens and energy for water heating, as well as heating for many houses.[59]

Without electricity, drinking water in all cities—as well as liquid and gaseous fossil fuels everywhere—would be unavailable. Powerful electric pumps feed water into the municipal supply, and they have an especially demanding task in cities with high commercial and residential densities where water must be lifted to a great height.[60] Electric motors run all the fuel pumps needed to move gasoline, kerosene, and diesel into tanks and wings. And while there may be plenty of natural gas in distribution gas pipelines—gas turbines are often used to move the fuel—in North America, where forced-air heating dominates, small electric motors operate fans that push the air heated by natural gas through the ducts.[61]

The long-term trend toward the electrification of societies (rising share of fuels converted to electricity rather than consumed directly) has been unmistakable. The new renewables—solar and wind, as opposed to hydroelectricity whose beginnings go back to 1882—will readily feed into this progression, but the history of electricity generation reminds us that many complications and complexities accompany the process; and that, despite its profound and rising importance, electricity still supplies only a relatively small share of final global energy consumption, just 18 percent.

Before you flip a switch

We need to go back to the industry’s beginnings to appreciate its foundations, its infrastructure, and the

legacy of these 140 years of development. Commercial electricity generation began in 1882, with three firsts. Two of them were the pioneering coal-fired generating stations designed by Thomas Edison (Holborn Viaduct in London began operating in January 1882; Pearl Street station in New York in September 1882), and the third was the first hydroelectric station (on the Fox River in Appleton, Wisconsin, also generating since September 1882).[62] Generation began to expand quickly during the 1890s, when alternating current (AC) transmission prevailed over the existing direct current networks, and when new designs of AC electric motors began to be adopted by industry and households. In 1900, less than 2 percent of the world's fossil fuel production was used to generate electricity; by 1950 that share was still less than 10 percent; it now stands at about 25 percent.[63]

The concurrent expansion of hydroelectric capacity accelerated during the 1930s, with large state-funded projects in the USA and the USSR, and reached new highs after the Second World War, culminating in the construction of record-size projects in Brazil (Itaipu, completed in 2007, 14 gigawatts) and China (Three Gorges, completed in 2012, 22.5 gigawatts).[64] Meanwhile, nuclear fission began to generate commercial electricity in 1956 at Britain's Calder Hall, saw its greatest expansion during the 1980s, peaked in 2006, and has since declined slightly to about 10 percent of global electricity generation.[65] Hydro generation accounted for nearly 16 percent in 2020; wind and solar added almost 7 percent; and the rest (about two-thirds) came from large central stations fueled mostly by coal and natural gas.

Not surprisingly, demand for electricity has been growing much faster than the demand for all other commercial energy: in the 50 years between 1970 and 2020, global electricity generation quintupled while the total primary

energy demand only tripled.[66] And the growth of baseload generation—the minimum amount of electricity that has to be supplied on a daily, monthly, or annual basis—was further increased as progressively larger shares of populations moved to cities. Decades ago, American demand was lowest during summer nights, with shops and factories closed, public transport shut down, and all but a small share of the population asleep, with open windows. Now the windows are shut as air conditioners hum through the night to make sleep possible during hot, muggy weather; in large cities and megacities, many factories run two shifts and many shops and airports remain open 24 hours a day. Only COVID-19 stopped New York's subway operating 24/7, and the Tokyo subway sleeps for just five hours (the first train from Tokyo Station to Shinjuku leaves at 5:16 a.m., the last one at 0:20 a.m.).[67] Satellite nighttime images taken years apart show how street, parking, and building lights shine ever brighter over ever-larger areas that often join with nearby cities to form huge illuminated conurbations.[68]

A very high reliability of electricity supply—grid managers talk about the desirability of reaching six nines: with 99.9999 percent reliability there are only 32 seconds of interrupted supply in a year!—is imperative in societies where electricity powers everything from lights (be they in hospitals, along runways, or to indicate emergency escapes) to heart-lung machines and myriad industrial processes.[69] If the COVID-19 pandemic brought disruption, anguish, and unavoidable deaths, those effects would be minor compared to having just a few days of a severely reduced electricity supply in any densely populated region, and if prolonged for weeks nationwide it would be a catastrophic event with unprecedented consequences.[70]

Decarbonization: pace and scale

There is no shortage of fossil fuel resources in the Earth's crust, no danger of imminently running out of coal and hydrocarbons: at the 2020 level of production, coal reserves would last for about 120 years, oil and gas reserves for about 50 years, and continued exploration would transfer more of them from the resource to the reserve (technically and economically viable) category. Reliance on fossil fuels has created the modern world, but concerns about the relatively rapid rate of global warming have led to widespread calls for doing away with fossil carbon as expeditiously as possible. Ideally, the decarbonization of the global energy supply should proceed fast enough to limit average global warming to no more than 1.5ºC (at worst 2ºC). That, according to most climate models, would mean reducing net global CO_2 emissions to zero by 2050 and keeping them negative for the remainder of the century.

Notice the key qualifying adjective: the target is not total decarbonization but "net zero" or carbon neutrality. This definition allows for continued emissions to be compensated by (as yet non-existent!) large-scale removal of CO_2 from the atmosphere and its permanent storage underground, or by such temporary measures as the mass-scale planting of trees.[71] By 2020, setting net-zero goals for years ending in five or zero has become a me-too game: more than 100 nations have joined the lineup, ranging from Norway in 2030 and Finland in 2035 to the entire European Union, as well as Canada, Japan, and South Africa, in 2050, and China (the world's largest consumer of fossil fuels) in 2060.[72] Given the fact that annual CO_2 emissions from fossil fuel combustion surpassed 37 billion tons in 2019, the net-zero goal by 2050 will call for an energy transition unprecedented in both pace and scale. A closer look at its key components reveals the magnitude of the challenges.

Decarbonization of electricity generation can make the fastest progress, because installation costs per unit of solar or wind capacity can now compete with the least expensive fossil-fueled choices, and some countries have already transformed their generation to a considerable degree. Among large economies, Germany is the most notable example: since the year 2000, it has boosted its wind and solar capacity 10-fold and raised the share of renewables (wind, solar, and hydro) from 11 percent to 40 percent of total generation. Intermittency of wind and solar electricity poses no problems as long as these new renewables supply relatively small shares of the total demand, or as long as any shortfalls can be made up by imports.

As a result, many countries now produce up to 15 percent of all electricity from intermittent sources without any major adjustments, and Denmark shows how a relatively small and well-interconnected market can go far higher.[73] In 2019, 45 percent of its electricity came from wind generation, and this exceptionally high share can be sustained without any massive domestic reserve capacities, because any shortfalls can be readily made up by imports from Sweden (hydro and nuclear electricity) and Germany (electricity coming from many sources). Germany could not do the same: its demand is more than 20 times the Danish total, and the country must maintain a sufficient reserve capacity that could be activated when new renewables are dormant.[74] In 2019, Germany generated 577 terawatt-hours of electricity, less than 5 percent more than in 2000—but its installed generating capacity expanded by about 73 percent (from 121 to about 209 gigawatts). The reason for this discrepancy is obvious.

In 2020, two decades after the beginning of *Energiewende*, its deliberately accelerated energy transition, Germany still had to keep most of its fossil-fired capacity (89 percent of it, actually) in order to meet

demand on cloudy and calm days. After all, in gloomy Germany, photovoltaic generation works on average only 11–12 percent of time, and the combustion of fossil fuels still produced nearly half (48 percent) of all electricity in 2020. Moreover, as its share of wind generation has increased, its construction of new high-voltage lines to transmit this electricity from the windy north to the southern regions of high demand has fallen behind. And in the US, where much larger transmission projects would be needed to move wind electricity from the Great Plains and solar electricity from the Southwest to high-demand coastal areas, hardly any long-standing plans to build these links have been realized.[75]

As challenging as such arrangements are, they rely on technically mature (and still improving) solutions—that is, on more efficient PV cells, large onshore and offshore wind turbines, and high-voltage (including long-distance direct current) transmission. If costs, permitting processes, and not-in-my-backyard sentiments were no obstacles, these techniques could be deployed fairly rapidly and economically. Moreover, the problems of intermittency of solar and wind generation could be resolved by renewed reliance on nuclear electricity generation. A nuclear renaissance would be particularly helpful if we cannot develop better ways of large-scale electricity storage soon.

We need very large (multi-gigawatt-hour) storage for big cities and megacities, but so far the only viable option to serve them is pumped hydro storage (PHS): it uses cheaper nighttime electricity to pump water from a low-lying reservoir to high-lying storage, and its discharge provides instantly available generation.[76] With renewably generated electricity, the pumping could be done whenever surplus solar or wind capacity is available, but obviously PHS can work only in places with suitable elevation differences and the operation consumes about a quarter of generated

electricity for the uphill pumping of water. Other energy storages, such as batteries, compressed air, and supercapacitors, still have capacities orders of magnitude lower than needed by large cities, even for a single day's worth of storage.[77]

In contrast, modern nuclear reactors, if properly built and carefully run, offer safe, long-lasting, and highly reliable ways of electricity generation; as already noted, they are able to operate more than 90 percent of the time, and their lifespan can exceed 40 years. Still, the future of nuclear generation remains uncertain. Only China, India, and South Korea are committed to further expansion of their capacities. In the West, the combination of high capital costs, major construction delays, and the availability of less expensive choices (natural gas in the US, wind and solar in Europe) has made new fission capacities unattractive. Moreover, America's new small, modular, and inherently safe reactors (first proposed during the 1980s) have yet to be commercialized, and Germany, with its decision to abandon all nuclear generation by 2022, is only the most obvious example of Europe's widely shared, deep anti-nuclear sentiment (for the assessment of real nuclear generation risks, see chapter 5).

But this may not last: even the European Union now recognizes that it could not come close to its extraordinarily ambitious decarbonization target without nuclear reactors. Its 2050 net-zero emissions scenarios set aside the decades-long stagnation and neglect of the nuclear industry, and envisage up to 20 percent of all energy consumption coming from nuclear fission.[78] Notice that this refers to total primary energy consumption, not just to electricity. Electricity is only 18 percent of total final global energy consumption, and the decarbonization of more than 80 percent of final energy uses—by industries, households, commerce, and transportation—will be even

more challenging than the decarbonization of electricity generation. Expanded electricity generation can be used for space heating and by many industrial processes now relying on fossil fuels, but the course of decarbonizing modern long-distance transportation remains unclear.

How soon will we fly intercontinentally on a wide-body jet powered by batteries? News headlines assure us that the future of flight is electric—touchingly ignoring the huge gap between the energy density of kerosene burned by turbofans and today's best lithium-ion (Li-ion) batteries that would be on board these hypothetically electric planes. Turbofan engines powering jetliners burn fuel whose energy density is 46 megajoules per kilogram (that's nearly 12,000 watt-hours per kilogram), converting chemical to thermal and kinetic energy—while today's best Li-ion batteries supply less than 300 Wh/kg, more than a 40-fold difference.[79] Admittedly, electric motors are roughly twice as efficient energy converters as gas turbines, and hence the effective density gap is "only" about 20-fold. But during the past 30 years the maximum energy density of batteries has roughly tripled, and even if we were to triple that again densities would still be well below 3,000 Wh/kg in 2050—falling far short of taking a wide-body plane from New York to Tokyo or from Paris to Singapore, something we have been doing daily for decades with kerosene-fueled Boeings and Airbuses.[80]

Moreover (as will be explained in chapter 3), we have no readily deployable commercial-scale alternatives for energizing the production of the four material pillars of modern civilization solely by electricity. This means that even with an abundant and reliable renewable electricity supply, we would have to develop new large-scale processes to produce steel, ammonia, cement, and plastics.

Not surprisingly, decarbonization outside of electricity generation has progressed slowly. Germany will soon

generate half of its electricity from renewables, but during the two decades of *Energiewende* the share of fossil fuels in the country's primary energy supply has only declined from about 84 percent to 78 percent: Germans like their unrestricted Autobahn speeds and their frequent intercontinental flying, and German industries hum on natural gas and oil.[81] If the country replicates its past record, then in 2040 its dependence on fossil fuels will still be close to 70 percent.

And what about countries that have not pushed renewables at extraordinary expense? Japan is the foremost example: in the year 2000 about 83 percent of its primary energy came from fossil fuels; in 2019 that share (due to the post-Fukushima loss of nuclear generation and the need for higher fuel imports) was 90 percent![82] And while the US has greatly reduced its dependence on coal—replaced by natural gas in electricity generation—the country's share of fossil fuels in primary energy supply was still 80 percent fossil in 2019. Meanwhile China's share of fossil fuels fell from 93 percent in the year 2000 to 85 percent in 2019—but this relative decline was accompanied by a near tripling of the country's fossil fuel demand. The economic rise of China was the main reason why the global consumption of fossil fuels rose by about 45 percent during the first two decades of the 21st century, and why, despite extensive and expensive expansion of renewable energies, the share of fossil fuels in the world's primary energy supply fell only marginally, from 87 percent to about 84 percent.[83]

Annual global demand for fossil carbon is now just above 10 billion tons a year—a mass nearly five times more than the recent annual harvest of all staple grains feeding humanity, and more than twice the total mass of water drunk annually by the world's nearly 8 billion inhabitants—and it should be obvious that displacing and replacing such

a mass is not something best handled by government targets for years ending in zero or five. Both the high relative share and the scale of our dependence on fossil carbon make any rapid substitutions impossible: this is not a biased personal impression stemming from a poor understanding of the global energy system – but a realistic conclusion based on engineering and economic realities.

In contrast to recent hasty political pledges, these realities have been recognized by all carefully considered long-term energy supply scenarios. The Stated Policies Scenario published by the International Energy Agency (IEA) in 2020 sees the share of fossil fuels declining from 80 percent of the total global demand in 2019 to 72 percent by 2040, while the IEA's Sustainable Development Scenario (its most aggressive decarbonization scenario so far, allowing for substantially accelerated global decarbonization) envisages fossil fuels supplying 56 percent of the global primary energy demand by 2040, making it highly improbable that this high share could be cut close to zero in a single decade.[84]

Certainly, the affluent world—given its wealth, technical capabilities, high level of per capita consumption and the concomitant level of waste—can take some impressive and relatively rapid decarbonization steps (to put it bluntly, it should do with using less energy of any kind). But that is not the case with the more than 5 billion people whose energy consumption is a fraction of those affluent levels, who need much more ammonia to raise their crop yields to feed their increasing populations, and much more steel and cement and plastics to build their essential infrastructures. What we need is to pursue a steady reduction of our dependence on the energies that made the modern world. We still do not know most of the particulars of this coming transition, but one thing remains certain: it will not be (it

cannot be) a sudden abandonment of fossil carbon, nor even its rapid demise—but rather its gradual decline.[85]

2. Understanding Food Production

Eating Fossil Fuels

Securing a sufficient quantity and nutritional variety of food is the existential imperative for every species. During their long evolution, our hominin ancestors evolved key physical advantages—erect posture, bipedalism, and relatively large brains—that set them apart from their simian ancestors. This combination of traits enabled them to become better scavengers, collectors of plants, and hunters of small animals.

Early hominins had only the simplest stone tools (hammerstones, choppers), which were useful for butchering animals, but they had no artifacts to aid hunting and catching. They could easily kill injured or sick animals and small, slower-moving mammals, but most of the meat of larger prey came from scavenging kills made by wild predators.[1] The eventual deployment of long spears, shafted axes, bows and arrows, woven nets, baskets, and fishing rods made it possible to hunt and catch a wide variety of species. Some groups—most notably the mammoth hunters of the Upper Paleolithic (this age ended about 12,000 years ago)—mastered the slaughter of large beasts, while many coastal dwellers became accomplished fishers: some even used boats to kill small migrating whales.

The transition from foraging (hunting and collecting) to sedentary living, supported by early agriculture and the domestication of several mammalian and avian species, resulted in a generally more predictable, but still often

unreliable, food supply that was able to support much higher population densities than was the case for earlier groups—but this didn't necessarily mean better average nutrition. Foraging in arid environments could require an area of more than 100 square kilometers to support a single family. For today's Londoners, that is roughly the distance from Buckingham Palace to the Isle of Dogs; for New Yorkers, that's how a seagull flies from Manhattan's tip to the middle of Central Park: a lot of ground to cover simply to survive.

In more productive regions, population densities could rise to as many as 2–3 people per 100 hectares (equal to about 140 standard soccer fields).[2] The only foraging societies with high population densities were coastal groups (most notably in the Pacific Northwest), who had access to annual fish migrations and plentiful opportunities to hunt aquatic mammals: reliable supply of high-protein, high-fat food allowed some of them to switch to sedentary lives in large communal wooden homes, and left them with spare time to carve impressive totem poles. In contrast, early agriculture, where the just-domesticated crops were harvested, meant that more than one person per hectare of cultivated land could be fed.

Unlike the foragers who might have gathered scores of wild species, practitioners of early agriculture had to narrow the variety of the plants they cultivated, as a few staple crops (wheat, barley, rice, corn, legumes, potatoes) dominated typical, overwhelmingly plant-based, diets—but these crops could support population densities that were two or three orders of magnitude higher than in foraging societies. In ancient Egypt, the density rate rose from about 1.3 people per hectare of cultivated land during the predynastic period (pre–3150 BCE) to about 2.5 people per hectare 3,500 years later, when the country was a province of the Roman Empire.[3] This is equivalent to needing an

area of 4,000 square meters to feed one person—or almost exactly six tennis courts. But this high production density was (due to the Nile's reliable annual flooding) an exceptionally good performance.

Over time, and very slowly, preindustrial rates of food production rose even higher—but rates of 3 people per hectare were not achieved until the 16th century, and only then in intensively cultivated regions of Ming China; in Europe they remained below 2 people per hectare until the 18th century. This stagnation, or at least very slow gains, in feeding capacity during the long course of preindustrial history meant that until a few generations ago only a small share of well-fed elites did not have to worry about having enough to eat. Even during the occasional years of above-average harvests, typical diets remained monotonous, and malnutrition and undernutrition were common. Harvests could fail, and crops were often destroyed in wars—famine was a regular occurrence. As a result, no recent transformation—such as increased personal mobility or a greater range of private possessions—has been so existentially fundamental as our ability to produce, year after year, a surfeit of food. Now most people in affluent and middle-income countries worry about what (and how much) is best to eat in order to maintain or improve their health and extend their longevity, not whether they will have enough to survive.

There are still significant numbers of children, adolescents, and adults who experience food shortages, particularly in the countries of sub-Saharan Africa, but during the past three generations their total has declined from the world's majority to less than 1 in 10 of the world's inhabitants. The United Nations' Food and Agricultural Organization (FAO) estimates that the worldwide share of undernourished people decreased from about 65 percent in 1950 to 25 percent by 1970, and to about 15 percent by the year 2000. Continued improvements (with fluctuations

caused by temporary national or regional setbacks due to natural disasters or armed conflicts) lowered the rate to 8.9 percent by 2019—which means that rising food production reduced the malnutrition rate from 2 in 3 people in 1950 to 1 in 11 by 2019.[4]

This impressive achievement is even more noteworthy if expressed in a way that accounts for the intervening large-scale increase of the global population, from about 2.5 billion people in 1950 to 7.7 billion in 2019. The steep reduction in global undernutrition means that in 1950 the world was able to supply adequate food to about 890 million people, but by 2019 that had risen to just over 7 billion: a nearly eight-fold increase in absolute terms!

What explains this impressive achievement? Answering that it must be due to higher crop yields is a truism. Saying that the increase has been the combined effect of better crop varieties, agricultural mechanization, fertilization, irrigation, and crop protection correctly describes the changes in key inputs—but it still misses the fundamental explanation. Modern food production, be it field cultivation of crops or the capture of wild marine species, is a peculiar hybrid dependent on two different kinds of energy. The first, and most obvious, is the Sun. But we also need the now indispensable input of fossil fuels, and the electricity produced and generated by humans.

When asked to give common examples of our reliance on fossil fuels, inhabitants of the colder parts of Europe and North America will think immediately about the natural gas used to heat their houses. People everywhere will point out the combustion of liquid fuels that power most of our transportation but the modern world’s most important—and fundamentally existential—dependence on fossil fuels is their direct and indirect use in the production of our food. Direct use includes fuels to power all field machinery (mostly tractors, combines, and other harvesters), the

transportation of harvests from fields to storage and processing sites, and irrigation pumps. Indirect use is much broader, taking into account the fuels and electricity used to produce agricultural machinery, fertilizers, and agrochemicals (herbicides, insecticides, fungicides), and other inputs ranging from glass and plastic sheets for greenhouses, to global positioning devices that enable precision farming.

The fundamental energy conversion producing our food has not changed: as always, we are eating, whether directly as plant foods or indirectly as animal foodstuffs, products of photosynthesis—the biosphere's most important energy conversion, powered by solar radiation. What has changed is the intensity of our crop, and animal, production: we could not harvest such abundance, and in such a highly predictable manner, without the still-rising inputs of fossil fuels and electricity. Without these anthropogenic energy subsidies, we could not have supplied 90 percent of humanity with adequate nutrition and we could not have reduced global malnutrition to such a degree, while simultaneously steadily decreasing the amount of time and the area of cropland needed to feed one person.

Agriculture—growing food crops for people and feed for animals—must be energized by solar radiation, specifically by the blue and red parts of the visible spectrum.[5] Chlorophylls and carotenoids, light-sensitive molecules in plant cells, absorb light at these wavelengths and use it to power photosynthesis, a multi-step sequence of chemical reactions that combines atmospheric carbon dioxide and water—as well as small amounts of elements including, notably, nitrogen and phosphorus—to produce new plant mass for grain, legume, tuber, oil, and sugar crops. Part of these harvests is fed to domestic animals to produce meat, milk, and eggs, and additional animal foods come from mammals that graze on grasses and aquatic species whose

growth depends ultimately on phytoplankton, the dominant plant mass produced by aquatic photosynthesis.[6]

This has always been so, from the very beginnings of settled cultivation going back some 10 millennia—but two centuries ago the addition of non-solar forms of energy began to affect the crop production and later also the capture of wild marine species. Initially this impact was marginal, and it became notable only in the early decades of the 20th century.

To trace the evolution of this epochal shift, we'll look next at the past two centuries of American wheat production. However, I could quite easily have chosen English or French wheat yields, or Chinese or Japanese rice yields; while agricultural advances may have happened at different times in cultivated parts of North America, Western Europe, and East Asia, there is nothing unique about this comparative sequence that is based on US data.

Three valleys, two centuries apart

We'll start in the Genesee Valley, western New York, in 1801. The new republic is in the 26th year of its existence and yet American farmers grow bread wheat not just the same way their ancestors did before they emigrated from England to British North America a few generations ago, but in a manner not too different from practices in ancient Egypt more than two millennia ago.

The sequence begins with two oxen harnessed to a wooden plow whose cutting edge is shod with an iron plate. Seed, saved from the previous year's crop, is sown by hand, and brush harrows are used to cover it up. Putting the crop in takes about 27 hours of human labor for every seeded hectare.[7] And the most laborious tasks are still to come. The crop is harvested by cutting with sickles; cut stalks are bundled and tied manually in sheaves, and they are stacked

upright (to make shocks or stooks) and left to dry. The sheaves are then hauled to a barn and threshed by flailing them on a hard floor, straw is stacked, and grain is winnowed (separated from the chaff), measured, and put into sacks. Securing the crop takes at least 120 hours of human labor per hectare.

The complete production sequence demands about 150 hours of human labor per hectare, as well as about 70 ox-hours. The yield is just one ton of grain per hectare, and of that at least 10 percent has to be set aside as seed for the next year's crop. Altogether, it takes about 10 minutes of human labor to produce a kilogram of wheat, and that would, with wholegrain flour, yield 1.6 kilograms (two loaves) of bread. This is laborious, slow, and low-yielding farming—but it is completely solar, and no other energy inputs are required beyond the Sun's radiation: the crops produce food for people and feed for animals; trees yield wood for cooking and heating; and wood is also used to make metallurgical charcoal for smelting iron ores and producing small metal objects including plow plates, sickles, scythes, knives, and strakes to cover wooden wagon wheels. In modern parlance, we would say that this farming requires no non-renewable (fossil fuel) energy inputs and only a minimum of non-renewable material subsidies (iron components, stones for gristmills), and that the production of both crops and materials relies solely on renewable energies deployed through the exertion of human and animal muscles.

A century later, in 1901, most of the country's wheat comes from the Great Plains and so we move to the Red River Valley, in eastern North Dakota. The Great Plains have been settled and industrialization has made enormous advances during the past two generations—although wheat farming still relies on draft animals, the wheat growing on large Dakota farms is highly mechanized. Teams of four powerful horses pull gang (multi-share) steel plows and

harrows, mechanical seed drills are used for planting, mechanical harvesters cut the stalks and bind the sheaves, and only the stooking is done manually. Sheaves are hauled to stacks and fed to threshing machines powered by steam engines, and grain is taken to granaries. The entire sequence takes less than 22 hours per hectare, about 1/7 of the time it did in 1801.[8] In this extensive cultivation, large areas make up for low yields: yields remain low at 1 ton per hectare but the investment of human labor is only about 1.5 minutes per kilogram of grain (compared to 10 minutes in 1801), while the use of draft animals adds up to about 37 horse-hours per hectare, or more than 2 minutes per kilogram of grain.

This is a new, hybrid kind of farming, as the indispensable solar input is augmented by non-renewable anthropogenic energies derived overwhelmingly from coal. The new arrangement requires more animal labor than human labor, and as working horses (and mules in the American South) need grain feed—mainly oats—as well as fresh grass and hay, their large numbers make substantial demands on the country's crop production: about one-quarter of all American farmland is devoted to growing fodder for draft animals.[9]

High-productivity harvests are possible thanks to increasing infusions of fossil energies. Coal is used to make metallurgical coke charged into blast furnaces, and cast iron is converted to steel in open hearth furnaces (see chapter 3). Steel is needed for agricultural machinery as well as for making steam engines, rails, wagons, locomotives, and ships. Coal also powers steam engines and produces the heat and electricity required to manufacture plows, drills, harvesters (also the first combines), wagons, and silos, and to operate railroads and ships that distribute the grain to its final consumers. Inorganic fertilizers are making their first inroads with the

imports of Chilean nitrates and with the application of phosphates mined in Florida.

In 2021, Kansas is the country's leading wheat-growing state and so we move to the Arkansas River Valley. In this heart of American wheat country, farms are now commonly three to four times larger than they were a century ago[10] — and yet most of the field work is done by only one or two people operating large machinery. The US Department of Agriculture stopped counting draft animals in 1961, and field work is now dominated by powerful tractors—many models have more than 400 horsepower and eight giant tires—pulling wide implements such as steel plows (with a dozen or more shares), seeders, and fertilizer applicators.[11]

Seed comes from certified growers, and young plants receive optimum amounts of inorganic fertilizers—above all, plenty of nitrogen applied as ammonia or urea—and targeted protection against insects, fungi, and competing weeds. Harvesting, and the concurrent threshing, is done by large combines that transfer grain directly to trucks to be transported to storage silos and sold around the country, or shipped to Asia or Africa. Producing wheat now takes less than two hours of human labor per hectare (compared to 150 hours in 1801), and with yields of around 3.5 tons per hectare this translates to less than two seconds per kilogram of grain.[12]

Many people nowadays admiringly quote the performance gains of modern computing ("so much data") or telecommunication ("so much cheaper")—but what about harvests? In two centuries, the human labor to produce a kilogram of American wheat was reduced from 10 minutes to less than two seconds. This is how our modern world really works. And as mentioned, I could have done similarly stunning reconstructions of falling labor inputs, rising yields, and soaring productivity for Chinese

or Indian rice. The time frames would be different but the relative gains would be similar.

Most of the admired and undoubtedly remarkable technical advances that have transformed industries, transportation, communication, and everyday living would have been impossible if more than 80 percent of all people had to remain in the countryside in order to produce their daily bread (the share of the US population who were farmers in 1800 was 83 percent) or their daily bowl of rice (in Japan, close to 90 percent of people lived in villages in 1800). The road to the modern world began with inexpensive steel plows and inorganic fertilizers, and a closer look is needed to explain these indispensable inputs that have made us take a well-fed civilization for granted.

What goes in

Preindustrial farming done with human and animal labor and with simple wooden and iron tools had the Sun as the only source of energy. Today, as ever, no harvests would be possible without Sun-driven photosynthesis, but the high yields produced with minimal labor inputs and hence with unprecedented low costs would be impossible without direct and indirect infusions of fossil energies. Some of these anthropogenic energy inputs are coming from electricity, which can be generated from coal or natural gas or renewables, but most of them are liquid and gaseous hydrocarbons supplied as machine fuels and raw materials.

Machines consume fossil energies directly as diesel or gasoline for field operations including the pumping of irrigation water from wells, for crop processing and drying, for transporting the harvests within the country by trucks, trains, and barges, and for overseas exports in the holds of large bulk carriers. Indirect energy use in making those machines is far more complex, as fossil fuels and electricity

go into making not only the steel, rubber, plastics, glass, and electronics but also assembling these inputs to make tractors, implements, combines, trucks, grain dryers, and silos.[13]

But the energy required to make and to power farm machinery is dwarfed by the energy requirements of producing agrochemicals. Modern farming requires fungicides and insecticides to minimize crop losses, and herbicides to prevent weeds from competing for the available plant nutrients and water. All of these are highly energy-intensive products but they are applied in relatively small quantities (just fractions of a kilogram per hectare).[14] In contrast, fertilizers that supply the three essential plant macronutrients—nitrogen, phosphorus, and potassium—require less energy per unit of the final product but are needed in large quantities to ensure high crop yields.[15]

Potassium is the least costly to produce, as all it takes is potash (KCl) from surface or underground mines. Phosphatic fertilizers begin with the excavation of phosphates, followed by their processing to yield synthetic superphosphate compounds. Ammonia is the starting compound for making all synthetic nitrogenous fertilizers. Every crop of high-yielding wheat and rice, as well as of many vegetables, requires more than 100 (sometimes as much as 200) kilograms of nitrogen per hectare, and these high needs make the synthesis of nitrogenous fertilizers the most important indirect energy input in modern farming.[16]

Nitrogen is needed in such great quantities because it is in every living cell: it is in chlorophyll, whose excitation powers photosynthesis; in the nucleic acids DNA and RNA, which store and process all genetic information; and in amino acids, which make up all the proteins required for the growth and maintenance of our tissues. The element is abundant—it makes up nearly 80 percent of the

atmosphere, organisms live submerged in it—and yet it is a key limiting factor in crop productivity as well as in human growth. This is one of the great paradoxical realities of the biosphere and its explanation is simple: nitrogen exists in the atmosphere as a non-reactive molecule (N_2), and only a few natural processes can split the bond between the two nitrogen atoms and make the element available to form reactive compounds.[17]

Lightning will do it: it produces nitrogen oxides, which dissolve in rain and form nitrates, and then forests, fields, and grasslands get fertilizer from above—but obviously this natural input is too small to produce crop harvests to feed the world's nearly 8 billion people. What lightning can do with tremendous temperatures and pressures, an enzyme (nitrogenase) can do in normal conditions: it is produced by bacteria associated with the roots of leguminous plants (pulses, as well as some trees) or that live freely in soil or in plants. Bacteria attached to the roots of leguminous plants are responsible for most natural nitrogen fixation—that is, for the cleavage of non-reactive N_2 and for the incorporation of nitrogen into ammonia (NH_3), a highly reactive compound that is readily converted into soluble nitrates and can supply plants with their nitrogen needs in return for organic acids synthesized by the plants.

As a result, leguminous food crops, including soybeans, beans, peas, lentils, and peanuts, are able to provide (fix) their own nitrogen supply, as can such leguminous cover crops as alfalfa, clovers, and vetches. But no staple grains, no oil crops (except for soybeans and peanuts), and no tubers can do that. The only way for them to benefit from the nitrogen-fixing abilities of legumes is to rotate them with alfalfa, clovers, or vetches, grow these nitrogen fixers for a few months, and then plow them under so the soils are replenished with reactive nitrogen to be picked up by the succeeding wheat, rice, or potatoes.[18] In traditional

agricultures, the only other option to enrich soil nitrogen stores was to collect and apply human and animal wastes. But this is an inherently laborious and inefficient way to supply the nutrient. These wastes have very low nitrogen content and they are subject to volatilization losses (the conversion of liquids to gases—the ammonia smell from manure can be overpowering).

In preindustrial cropping, the wastes had to be collected in villages, towns, and cities, fermented in heaps or pits and—because of their low nitrogen content—applied to fields in massive amounts, commonly 10 tons per hectare but sometimes up to 30 tons (the latter mass being equivalent to 25–30 small European cars), in order to provide the needed nitrogen. Not surprisingly, this was commonly the most time-consuming task in traditional farming, claiming at least a fifth, and as much as a third, of all (human and animal) labor in cropping. Recycling organic wastes is hardly a topic addressed by famous novelists, but Émile Zola, always a complete realist, captured its importance when he described Claude, a young Parisian painter who "had quite a liking for manure." Claude volunteers to toss into the pit "the scourings of markets, the refuse that fell from that colossal table, remained full of life, and returned to the spot where the vegetables had previously sprouted … They rose again in fertile crops, and once more went to spread themselves out upon the market square. Paris rotted everything, and returned everything to the soil, which never wearied of repairing the ravages of death."[19]

But at what cost of human toil! This great nitrogen barrier to higher crop yields was nudged only during the 19th century with the mining and export of Chilean nitrates, the first inorganic nitrogenous fertilizer. The barrier was then broken decisively with the invention of ammonia synthesis by Fritz Haber in 1909 and with its

rapid commercialization (ammonia was first shipped in 1913), but subsequent production grew slowly and the widespread application of nitrogenous fertilizers had to wait until after the Second World War.[20] New high-yielding varieties of wheat and rice introduced during the 1960s could not express their full yield potential without synthetic nitrogenous fertilizers. And the great productivity shift known as the Green Revolution could not have taken place without this combination of better crops and higher nitrogen applications.[21]

Since the 1970s, the synthesis of nitrogenous fertilizers has undoubtedly been the *primus inter pares* among agricultural energy subsidies—but the full scale of this dependence is only revealed by looking at detailed accounts of the energy required to produce various common foodstuffs. I have chosen three of them to use as examples, and I picked them because of their nutritional dominance. Bread has been the staple of European civilization for millennia. Given the religious proscriptions on the consumption of pork and beef, chicken is the only universally favored meat. And no other vegetable (although botanically a fruit) surpasses the annual production of tomatoes, now grown not only as a field crop but increasingly in plastic or glass greenhouses.

Each of these foodstuffs has a different nutritional role (bread is eaten for its carbohydrates, chicken for its perfect protein, tomatoes for their vitamin C content) but none of them could be produced so abundantly, so reliably, and so affordably without considerable fossil fuel subsidies. Eventually, our food production will change, but for now, and for the foreseeable future, we cannot feed the world without relying on fossil fuels.

The energy costs of bread, chicken, and tomatoes

Given the enormous variety of breads, I'm going to stick to just a few varieties of leavened breads common in Western diets and now available in places ranging from West Africa (*outre-mer* domain of the French baguette) to Japan (every major department store has a French or German bakery). We have to start with wheat, and helpfully there is no shortage of studies that have attempted to quantify all fuel and electricity inputs and to compare them per harvested area or per unit of yield for different kinds of grain crops.[22] Grain cultivation is at the bottom of the energy subsidy ladder, needing relatively little compared to our other chosen foodstuffs, but as we shall see, it still needs a surprisingly large amount of energy.

Efficient American production of rain-fed wheat on the large fields of the Great Plains requires only about 4 megajoules per kilogram of grain. Because such a large share of this energy is in the form of diesel fuel refined from crude oil, the comparison might be more tangible in terms of equivalents rather than in standard energy units (joules).[23] Moreover, expressing the needs for diesel fuel in terms of volumes per unit of edible product (be it 1 kilogram, a loaf of bread, or a meal) makes such energy subsidies more readily imaginable.

With diesel fuel containing 36.9 megajoules per liter, the typical energy cost of wheat from the Great Plains is almost exactly 100 milliliters (1 deciliter or 0.1 liters) of diesel fuel per kilogram[24] —just a bit less than half of the US cup measurement. I will use specific volume equivalents of diesel fuel to label individual foodstuffs with the energy embedded in their production.

Basic sourdough bread is the simplest kind of a leavened bread, the staple of European civilization: it contains just bread flour, water, and salt, and the leavening is made, of course, from flour and water. A kilogram of this bread will be about 580 grams of flour, 410 grams of water, and 10

grams of salt.[25] Milling—that is, removing the seed's bran, the outer layer—reduces the mass of milled grains by about 25 percent (a flour extraction rate of 72–76 percent).[26] This means that to get 580 grams of bread flour, we have to start with about 800 grams of whole wheat, whose production requires 80 milliliters of diesel fuel equivalent.

Milling the grain needs an equivalent of about 50 mL/kg to produce white bread flour, while published data for large-scale baking in modern efficient enterprises—consuming natural gas and electricity—indicate fuel equivalents of 100–200 mL/kg.[27] Growing the grain, milling it, and baking a 1-kilogram sourdough loaf thus requires an energy input equivalent of at least 250 milliliters of diesel fuel, a volume slightly larger than the American measuring cup. For a standard baguette (250 grams), the embedded energy equivalent is about 2 tablespoons of diesel fuel; for a large German *Bauernbrot* (2 kilograms), it would be about 2 cups of diesel fuel (less for a wholewheat loaf).

The real fossil energy cost is higher still, because only a small share of bread is now baked where it is bought. Even in France, neighborhood *boulangeries* have been disappearing and baguettes are distributed from large bakeries: energy savings from industrial-scale efficiency are negated by increased transportation costs, and the total cost (from growing and milling grain to baking in a large bakery and distributing bread to distant consumers) may have an equivalent energy consumption as high as 600 mL/kg!

But if the bread's typical (roughly 5:1) ratio of edible mass to the mass of embedded energy (1 kilogram of bread compared to about 210 grams of diesel fuel) seems uncomfortably high, recall that I have already noted that grains—even grains after processing and conversion into our favorite foods—are at the bottom of our food energy

subsidy ladder. What would be the consequences of following such a dubious dietary recommendation, now pushed by some promoters under the misleading label of the “Paleolithic diet,” as avoiding all cereals and switching instead to diets composed only of meat, fish, vegetables, and fruit?

Rather than tracing the energy cost of beef (a meat that has already been much maligned), I will instead quantify the energy burdens of the most efficiently produced meat—that of broilers reared in large barns in what have become known as CAFOs, central animal feeding operations. In the case of chicken, this means housing and feeding tens of thousands of birds in long rectangular structures where they are crowded in dimly lit spaces (the equivalent of a moonlit night) and fed for about seven weeks before being taken away for slaughter.[28] The US Department of Agriculture publishes statistics on the annual feeding efficiency of domestic animals, and over the past five decades these ratios (units of feed expressed in terms of corn grain per unit of live weight) show no downward trends for either beef or pork, but impressive gains for chicken.[29]

In 1950, 3 units of feed were needed per unit of live broiler weight; now that number is just 1.82, about a third of the rate for pigs and a seventh of the rate for cattle.[30] Obviously, the entire bird (including feathers and bones) is not eaten, and the adjustment for edible weight (about 60 percent of live weight) puts the lowest feed-to-meat ratio at 3:1. Producing one American chicken (whose average edible weight is now almost exactly 1 kilogram) needs 3 kilograms of grain corn.[31] Corn’s efficient, rain-fed cultivation has high yields and relatively low energy costs—equivalent to about 50 milliliters of diesel fuel per kilogram of grain—but the energy cost of irrigated corn may be twice as high as that of rain-fed feed, and typical corn yields and

feeding efficiencies around the world are lower than in the US. As a result, feed costs alone can be as low as 150 milliliters of diesel fuel per kilogram of edible meat, and as high as 750 mL/kg.

Further energy costs arise from a large-scale intercontinental trade in feedstuffs: it is dominated by the shipment of American corn and soybeans and the sale of Brazilian soybeans. Brazilian soybean cultivation requires the equivalent of 100 milliliters of diesel fuel per kilogram of grain, but trucking the crop from producing areas to ports and shipping it to Europe doubles the energy cost.[32] Growing broilers to slaughter weight also requires energy for heating, air conditioning, and maintaining the poultry houses, for supplying water and sawdust, and for removing and composting waste. These requirements vary widely with location (above all, due to summer air conditioning and winter heating), and hence when combined with the energy cost of delivered feed a wide range of volumes is produced—from 50 to 300 milliliters per kilogram of edible meat.[33]

The most conservative combined rate for feeding and rearing the birds would be thus an equivalent of about 200 milliliters of diesel fuel per kilogram of meat, but the values can go as high as 1 liter. Adding the energy needed for slaughtering and processing the birds (chicken meat is now overwhelmingly marketed as parts, not as whole broilers), retailing, storing and home refrigeration, and eventual cooking raises the total energy requirement for putting a kilogram of roasted chicken on dinner plates to at least 300–350 milliliters of crude oil: a volume equal to almost half a bottle of wine (and for the least efficient producers, to more than a liter).

The minima of 300–350 mL/kg is a remarkably efficient performance compared to the rates of 210–250 mL/kg for bread, and this is reflected in the comparably affordable

prices of chicken: in US cities, the average price of a kilogram of white bread is only about 5 percent lower than the average price per kilogram of whole chicken (and wholewheat bread is 35 percent more expensive!), while in France a kilogram of standard whole chicken costs only about 25 percent more than the average price of bread.[34] This helps to explain the rapid rise of chicken to become the dominant meat in all Western countries (globally, pork still leads, thanks to China's enormous demand).

Given that vegans extol eating plants, and that the media have reported extensively on the high environmental cost of meat, you might think that gains in the energy cost of chicken have been surpassed by those in the cultivation and marketing of vegetables. You would be mistaken to think that. The opposite has been true, in fact, and there is no better example to illustrate these surprisingly high energy burdens than taking a close look at tomatoes. They have it all—an attractive color, a variety of shapes, smooth skin, and a juicy interior. Botanically, a tomato is the fruit of the *Lycopersicon esculentum*, a small plant native to Central and South America that was introduced to the rest of the world during the age of first European transatlantic sailings but which took generations to establish worldwide appeal.[35] Eaten out of hand, in soups, filled, baked, chopped, boiled, pureed into sauces, and added to countless salads and cooked dishes, it is now a global favorite embraced in countries ranging from its native Mexico and Peru to Spain, Italy, India, and China (now its largest producer).

Nutritional compendia praise its high vitamin C content: indeed, a large tomato (200 grams) can provide two-thirds of the daily recommended requirement for an adult.[36] But as with all fresh and juicy fruits, it is not eaten for its energy content; it is, overwhelmingly, just an appealingly shaped container of water, which comprises 95 percent of

its mass. The remainder is mostly carbohydrate, a bit of protein, and a mere trace of fat.

Tomatoes can be grown anywhere with at least 90 days of warm weather, including the deck of a seaside cottage near Stockholm or in a garden on the Canadian Prairies (in both cases, from plants started indoors). Commercial cultivation is a different matter, however. As with all but a small share of the fruits and vegetables that are consumed in modern societies, tomato cultivation is a highly specialized affair and most of the varieties available in North American and European supermarkets come from only a few places. In the US it is California; in Europe it is Italy and Spain. In order to increase their yield, improve their quality, and reduce the intensity of energy inputs, tomatoes are increasingly grown in plastic-covered single- or multi-tunnel enclosures or in greenhouses—not only in Canada and the Netherlands but also in Mexico, China, Spain, and Italy.

This brings us back to fossil fuels and electricity. Plastics are a less expensive alternative to constructing multi-tunnel glass greenhouses, and the cultivation of tomatoes also requires plastic clips, wedges, and gutter arrangements. Where the plants are grown in the open, plastic sheets are used to cover the soil in order to reduce water evaporation and prevent weeds. The synthesis of plastic compounds relies on hydrocarbons (crude oil and natural gas), both for raw materials (feedstocks) and for the energy needed to produce them. Feedstocks include ethane and other natural gas liquids, and naphtha produced during the refining of crude oil. Natural gas is also used to fuel plastic production, and it is (as already noted) the most important feedstock—the source of hydrogen—for the synthesis of ammonia. Other hydrocarbons serve as feedstocks to produce protective compounds (insecticides and fungicides), because even

plants inside glass or plastic greenhouses are not immune to pests and infections.

Expressing the annual operating costs of tomato cultivation in monies is done easily by adding up the expenditure on seedlings, fertilizers, agrochemicals, water, heating, and labor, and by prorating the costs of original structures and devices—metal supports, plastic covers, glass, pipes, troughs, heaters—that are in place for more than one year. But putting a comprehensive energy bill together is not that simple. Direct energy inputs are easy to quantify on the basis of electricity bills and gasoline or diesel fuel purchases, but calculating the indirect flows into the production of materials requires some specialized accounting, and usually some assumptions.

Detailed studies have quantified these inputs and multiplied them by their typical energy costs: for example, the synthesis, formulation, and packaging of 1 kilogram of nitrogenous fertilizer requires an equivalent of nearly 1.5 liters of diesel fuel. Not surprisingly, these studies show a wide range of totals, but one study—perhaps the most meticulous study of tomato cultivation in the heated and unheated multi-tunnel greenhouses of Almería in Spain—concluded that the cumulative energy demand of net production is more than 500 milliliters of diesel fuel (more than two cups) per kilogram for the former (heated) and only 150 mL/kg for the latter harvest.[37]

We get this high energy cost, in large part, because greenhouse tomatoes are among the world's most heavily fertilized crops: per unit area they receive up to 10 times as much nitrogen (and also phosphorus) as is used to produce grain corn, America's leading field crop.[38] Sulfur, magnesium, and other micronutrients are also used, as are chemicals protecting against insects and fungi. Heating is the most important direct use of energy in greenhouse cultivation: it extends the growing season and improves

crop quality but, inevitably, when deployed in colder climates it becomes the single largest user of energy.

Plastic greenhouses located in the southernmost part of Almería province are the world's largest covered area of commercial cultivation of produce: about 40,000 hectares (think of a 20 km × 20 km square) and easily identifiable on satellite images—look for yourself on Google Earth. You can even take a ride on Google Street View, which offers an otherworldly experience of these low-elevation, plastic-covered structures. Under this sea of plastic, the Spanish growers and their local and immigrant African laborers produce annually (in temperatures often surpassing 40ºC) nearly 3 million tons of early and out-of-season vegetables (tomatoes, peppers, green beans, zucchini, eggplant, melons) and some fruit, and export about 80 percent of it to EU countries.[39] A truck transporting a 13-ton load of tomatoes from Almería to Stockholm covers 3,745 kilometers and consumes about 1,120 liters of diesel fuel.[40] That works out to nearly 90 milliliters per kilogram of tomatoes, and transport, storage, and packing at the regional distribution centers as well as deliveries to stores raises that to nearly 130 mL/kg.

This means that when bought in a Scandinavian supermarket, tomatoes from Almería's heated plastic greenhouses have a stunningly high embedded production and transportation energy cost. Its total is equivalent to about 650 mL/kg, or more than five tablespoons (each containing 14.8 milliliters) of diesel fuel per medium-sized (125 gram) tomato! You can stage—easily and without any waste—a tabletop demonstration of this fossil fuel subsidy, by slicing a tomato of that size, spreading it out on a plate, and pouring over it 5–6 tablespoons of dark oil (sesame oil replicates the color well). When sufficiently impressed by the fossil fuel burden of this simple food, you can transfer the plate's contents to a bowl, add two or three additional

tomatoes, some soy sauce, salt, pepper, and sesame seeds, and enjoy a tasty tomato salad. How many vegans enjoying the salad are aware of its substantial fossil fuel pedigree?

Diesel oil behind seafood

High agricultural productivities of modern societies have made hunting on land (the seasonal shooting of some wild mammals and birds) a marginal source of nutrition in all affluent societies. Wild meat, mostly illegally hunted, is still more common throughout sub-Saharan Africa, but with rapidly growing populations even there it has ceased to be a major source of animal protein. By contrast, marine hunting has never been practiced more widely and more intensively than it is today, as huge fleets of ships—ranging from large modern floating factories to decrepit small boats—scour the world's oceans for wild fish and crustaceans.[41]

As it turns out, capturing what the Italians so poetically call *frutti di mare* is the most energy-intensive process of food provision. Of course, not all seafood is difficult to catch, and harvesting many still-abundant species does not require long expeditions to the remote areas of the southern Pacific. Capturing such plentiful pelagic (living near the surface) species as anchovies and sardines or mackerel can be done with a relatively small energy investment—indirectly in constructing ships and making large nets, directly in the diesel fuel used for ship engines. The best accounts show energy expenditures as low as 100 mL/kg for their capture, an equivalent of less than half a cup of diesel fuel.[42]

If you want to eat wild fish with the lowest-possible fossil carbon footprint, stick to sardines. The mean for all seafood is stunningly high—700 mL/kg (nearly a full wine bottle of diesel fuel)—and the maxima for some wild shrimp and lobsters are, incredibly, more than 10 L/kg (and that

includes a great deal of inedible shells!).[43] This means that just two skewers of medium-sized wild shrimp (total weight of 100 grams) may require 0.5–1 liters of diesel fuel to catch—the equivalent of 2–4 cups of fuel.

But, you will object, shrimp are now mostly aquacultured, and haven't these large-scale, industrial-type operations enjoyed the same advantages that we have exploited so successfully with broilers? Alas, no, because of their fundamental metabolic difference. Broilers are herbivores, and when in confinement their energy expenditure on activity is limited. Therefore feeding them suitable plant matter—now mostly a combination of corn- and soybean-based mixtures—will make them grow fast. Unfortunately, the marine species that people prefer to eat (salmon, sea bass, tuna) are carnivorous, and for their proper growth they need to be fed protein-rich fish meals and fish oil derived from catches of wild species such as anchovies, pilchards, capelin, herring, and mackerel.

Expanding aquaculture—whose total global output, freshwater and marine, is now closing in on the worldwide wild catch (in 2018 it was 82 million tons compared to 96 million tons of wild-caught species)—has eased the pressure on some overfished wild stocks of preferred carnivorous fishes, but it has intensified the exploitation of smaller herbivorous species whose growing harvests are needed to feed expanding aquaculture.[44] As a result, the energy costs of growing Mediterranean sea bass in cages (Greece and Turkey are its leading producers) are commonly equivalent to as much as 2–2.5 liters of diesel fuel per kilogram (a volume about the same as three bottles of wine)—that is, of the same order of magnitude as the energy costs of capturing similarly sized wild species.

As expected, only aquacultured herbivorous fish that grow well consuming plant-based feed—most notably, different species of Chinese carp (bighead, silver, black,

and grass carp are the most common)—have a low energy cost, typically less than 300 mL/kg. But, traditional Christmas Eve dinners in Austria, Czech Republic, Germany, and Poland aside, carp is quite an unpopular culinary choice in Europe and it is barely eaten in North America, while demand for tuna, some species of which are now among the most endangered top marine carnivores, has been soaring thanks to the rapid worldwide adoption of sushi.

So, the evidence is inescapable: our food supply—be it staple grains, clucking birds, favorite vegetables, or seafood praised for its nutritious quality—has become increasingly dependent on fossil fuels. This fundamental reality is commonly ignored by those who do not try to understand how our world really works and who are now predicting rapid decarbonization. Those same people would be shocked to know that our present situation cannot be changed easily or rapidly: as we saw in the preceding chapter, the ubiquity and the scale of the dependence are too large for that.

Fuel and food

Several studies have traced the growth of food production's dependence on modern—overwhelmingly fossil—energy inputs, from their absence in the early 19th century to recent rates (ranging from less than 0.25 tons of crude oil per hectare in grain farming to 10 times as much in heated greenhouse cultivation).[45] Perhaps the best way to realize the rise and the extent of this global dependence is to compare the increase of external energy subsidies to the expansion of cultivated land and to the growth of the world's population. Between 1900 and the year 2000, the global population increased less than fourfold (3.7 times to be exact) while farmland grew by about 40 percent, but my

calculations show that anthropogenic energy subsidies in agriculture increased 90-fold, led by energy embedded in agrochemicals and in fuels directly consumed by machinery.[46]

I have also calculated the relative global burden of this dependence. Anthropogenic energy inputs into modern field farming (including all transportation), fisheries, and aquaculture add up to only about 4 percent of recent annual global energy use. This may be a surprisingly small share, but it must be remembered that the Sun will always do most of the work of growing food, and that external energy subsidies target those components of the food system where the greatest returns can be expected by reducing or removing natural constraints—be it by fertilizing, irrigating, providing protection against insects, fungi and competing plants, or by promptly harvesting mature crops. The low share may also be seen as yet another convincing example of small inputs having disproportionately large consequences, not an uncommon finding in the behavior of complex systems: think of vitamins and minerals, needed daily in just milligrams (vitamin B6 or copper) or micrograms (vitamin D, vitamin B12) to keep bodies weighing tens of kilograms in good shape.

But the energy required for food production—field farming, animal husbandry, and seafood—is only a part of the total food-related fuel and electricity needs, and estimating the use in the entire food system results in much higher shares of the total supply. Our best data are available for the US, where, thanks to the prevalence of modern techniques and widespread economies of scale, the direct energy use in food production is now on the order of 1 percent of the total national supply.[47] But after adding the energy requirements of food processing and marketing, packaging, transportation, wholesale and retail services,

household food storage and preparation, and away-from-home food and marketing services, the grand total in the US reached nearly 16 percent of the nation's energy supply in 2007 and now it is approaching 20 percent.[48] The factors driving these rising energy needs range from further consolidation of production—and hence growing transportation needs—and growing food import dependency, to more meals eaten away from home and more prepared (convenience) foods consumed at home.[49]

There are many reasons why we should not continue many of today's food-producing practices. Agriculture's major contribution to the generation of greenhouse gases is now the most-often cited justification for following a different path. But modern crop cultivation, animal husbandry, and aquaculture have many other undesirable environmental impacts, ranging from the loss of biodiversity to the creation of dead zones in coastal waters (for more on this see chapter 6)—and there are no good reasons for maintaining our excessive food production with its attendant food waste. So, many changes are clearly desirable, but how fast can they actually happen, and how radically can we reform our current ways in reality?

Can we go back?

Can we reverse at least some of these trends? Can the world of soon-to-be 8 billion people feed itself—while maintaining a variety of crop and animal products and the quality of prevailing diets—without synthetic fertilizers and without other agrochemicals? Could we return to purely organic cropping, relying on recycled organic wastes and natural pest controls, and could we do without engine-powered irrigation and without field machinery by bringing back draft animals? We could, but purely organic farming would require most of us to abandon cities, resettle

villages, dismantle central animal feeding operations, and bring all animals back to farms to use them for labor and as sources of manure.

Every day we would have to feed and water our animals, regularly remove their manure, ferment it and then spread it on fields, and tend the herds and flocks on pasture. As seasonal labor demands rose and ebbed, men would guide the plows harnessed to teams of horses; women and children would plant and weed vegetable plots; and everybody would be pitching in during harvest and slaughter time, stooking sheaves of wheat, digging up potatoes, helping to turn freshly slaughtered pigs and geese into food. I do not foresee the organic green online commentariat embracing these options anytime soon. And even if they were willing to empty the cities and embrace organic earthiness, they could still produce only enough food to sustain less than half of today's global population.

The numbers to confirm all of the above are not difficult to marshal. The decline of human labor required to produce American wheat outlined earlier in this chapter is an excellent proxy for the overall impact that mechanization and agrochemicals have had on the size of the country's agricultural labor force. Between 1800 and 2020, we reduced the labor needed to produce a kilogram of grain by more than 98 percent—and we reduced the share of the country's population engaged in agriculture by the same large margin.[50] This provides a useful guide to the profound economic transformations that would have to take place with any retreat of agricultural mechanization and reduction in the use of synthetic agrochemicals.

The greater the reduction of these fossil fuel–based services, the greater the need for the labor force to leave the cities to produce food in the old ways. During the pre-1920 peak of US horse and mule numbers, one-quarter of the country's farmland was dedicated to growing feed for

the more than 25 million American working horses and mules—and at that time US farms had to feed only about 105 million people. Obviously, feeding today's more than 330 million people by deploying "just" 25 million horses would be impossible. And without synthetic fertilizers, yields of food and feed crops dependent on the recycling of organic matter would be a fraction of today's harvest. Corn, America's largest crop, yielded less than 2 tons per hectare in 1920, and 11 tons per hectare in 2020.[51] Millions of additional draft animals would be needed to cultivate virtually all of the country's available farmland, and it would be impossible to find enough recyclable organic matter (and eager Claude-like manure-liking tossers!) or cultivate sufficiently large areas of green manures (rotating grain with alfalfa or clover) to match the nutrients supplied by today's applications of synthetic fertilizers.

This impossibility is best illustrated by a few sets of simple comparisons. Recycling of organic matter is always highly desirable, as it improves the structure of soil, increases its organic content, and provides energy for myriad soil microbes and invertebrates. But the very low nitrogen content of organic matter means that farmers have to apply very large quantities of straw or manure in order to supply enough of this essential plant nutrient to produce high crop yields. The nitrogen content of cereal straws (the most abundant crop residue) is always low, usually 0.3–0.6 percent; manure mixed with animal bedding (usually straw) contains only 0.4–0.6 percent; fermented human waste (China's so-called night soil) has just 1–3 percent; and manures applied to fields rarely contain more than 4 percent.

In contrast, urea, now the world's dominant solid nitrogenous fertilizer, contains 46 percent nitrogen, ammonium nitrate has 33 percent, and commonly used liquid solutions contain 28–32 percent, at least an order of

magnitude more nitrogen-dense than recyclable wastes.[52] This means that to supply the same amount of the nutrient to growing crops, a farmer would have to apply anywhere between 10 and 40 times as much manure by mass—and in reality even more of it would be needed, as significant shares of nitrogenous compounds are lost due to volatilization, or dissolved in water and carried below the root level, with the aggregate losses of nitrogen from organic matter being almost always higher than those from a synthetic liquid or solid.

Moreover, there would be a more than commensurate claim on labor, as the handling, transporting, and spreading of manure is far more difficult than dealing with small, free-flowing granules that can be easily applied by mechanical spreaders or (as is done with urea in small Asian rice fields) simply by sowing it by hand. And regardless of the effort that might be put into organic recycling, the total mass of recyclable materials is simply too small to provide the nitrogen required by today's harvests.

Global inventory of reactive nitrogen shows that six major flows bring the element to the world's croplands: atmospheric deposition, irrigation water, plowing-under of crop residues, spreading of animal manures, nitrogen left in soil by leguminous crops, and application of synthetic fertilizers.[53]

Atmospheric deposition—mainly as rain and snow containing dissolved nitrates—and recycled crop residues (straws and plant stalks that are not removed from fields to feed animals or burned onsite) each contribute about 20 megatons of nitrogen per year. Animal manures applied to fields, mainly from cattle, pigs, and chickens, contain almost 30 megatons; a similar total is introduced by leguminous crops (green manure cover crops, as well as soybeans, beans, peas, and chickpeas); and irrigation water brings about 5 megatons—for a total of about 105

megatons of nitrogen per year. Synthetic fertilizers supply 110 megatons of nitrogen per year, or slightly more than half of the 210–220 megatons used in total. This means that at least half of recent global crop harvests have been produced thanks to the application of synthetic nitrogenous compounds, and without them it would be impossible to produce the prevailing diets for even half of today's nearly 8 billion people. While we could reduce our dependence on synthetic ammonia by eating less meat and wasting less food, replacing the global input of about 110 megatons of nitrogen in synthetic compounds by organic sources could be done only in theory.

Multiple constraints limit the recycling of manure produced by animals in confinement.[54] In traditional mixed farming, cattle, pig, and poultry manure from relatively small numbers of animals was directly recycled on adjacent fields. Producing meat and eggs in central animal feeding operations reduced this option: these enterprises generate such large quantities of waste that its application to fields would overload soils with nutrients within the radius where it would be profitable to spread it; presence of heavy metals and drug residues (from feed additives) is another problem.[55] Similar constraints apply to the expanded use of sewage sludge (biosolids) from modern human waste treatment plants. Waste's pathogens must be destroyed by fermentation and by high-heat sterilization, but such treatments do not kill all antibiotic-resistant bacteria and do not remove all heavy metals.

Grazing animals produce three times as much manure as do mammals and birds kept in confinement: the FAO estimates that they leave annually about 90 megatons of nitrogen in waste—but exploiting this large source is impractical.[56] Accessibility would limit any gathering of animal urine and excrement to a fraction of the hundreds of millions of hectares of pastures where these wastes are

expelled by grazing cattle, sheep, and goats. Gathering it would be as prohibitively costly as its transportation to treatment points and then to crop fields. Moreover, intervening nitrogen losses would further reduce the already very low nitrogen content of such wastes before the nutrient could reach the fields.[57]

Another choice is to expand the cultivation of leguminous crops to produce 50–60 megatons of nitrogen per year, rather than about 30 megatons as they currently do—but only at a considerable opportunity cost. Planting more leguminous cover crops such as alfalfa and clover would boost nitrogen supply but would also reduce the ability to use one field to produce two crops in a year, a vital option for the still-expanding populations of low-income countries.[58] Growing more leguminous grains (beans, lentils, peas) would lower the overall food energy yields, because they yield far less than cereal crops and, obviously, this would reduce the number of people that could be supported by a unit of cultivated land.[59] Moreover, the nitrogen left behind by a soybean crop—commonly 40–50 kilograms of nitrogen per hectare—would be less than the typical American applications of nitrogenous fertilizers, which are now about 75 kg N/ha for wheat and 150 kg N/ha for grain corn.

Another obvious drawback of expanded rotations with leguminous crops is that in colder climates, where only a single crop can be grown in a year, cultivation of alfalfa or clover would preclude the annual planting of a food crop, while in warmer regions with double-cropping it would reduce the frequency of harvesting food crops.[60] While it might be possible in countries with small populations and plentiful farmland, it would, inevitably, reduce food-producing capacity in all places where double-cropping is common, including large parts of Europe and the North

China Plain, the region that produces about half of China's grain.

Double-cropping is now practiced on more than a third of China's cultivated land, and more than a third of all rice comes from double-cropping in South China.[61] Consequently, the country would find it impossible to feed its now more than 1.4 billion people without this intensive cultivation that also requires record-level nitrogen applications. Even in traditional Chinese farming, famous for its high rate of organic recycling and for complex crop rotations, farmers in the most intensively cultivated regions could not supply more than 120–150 kg N/ha—and doing so required extraordinarily high labor inputs, with (as already stressed) manure collection and application being the most time-consuming.

Even so, such farms could produce only overwhelmingly vegetarian diets for 10–11 people per hectare. In contrast, China's most productive double-cropping depends on applications of synthetic nitrogenous fertilizers averaging more than 400 kg N/ha, and it can produce enough to feed 20–22 people whose diets contain about 40 percent animal and 60 percent plant protein.[62] Global crop cultivation supported solely by the laborious recycling of organic wastes and by more common rotations is conceivable for a global population of 3 billion people consuming largely plant-based diets, but not for nearly 8 billion people on mixed diets: recall that synthetic fertilizers now supply more than twice as much nitrogen as all recycled crop residues and manures (and given the higher losses from organic applications, the effective multiple is actually closer to three!).

Doing with less—and doing without

But none of this means that major shifts in our dependence on fossil fuel subsidies in food production are impossible. Most obviously, we could reduce our crop and animal production—and the attendant energy subsidies—if we wasted less food. In many low-income countries, poor crop storage (making grains and tubers vulnerable to rodents, insects, and fungi) and the absence of refrigeration (accelerating the spoilage of dairy products, fish, and meat) wastes too much food even before it reaches its markets. And in affluent countries, food chains are longer and opportunities for inadvertent food losses arise at every step.

Even so, the well-documented global food losses have been excessively high, mostly because of an indefensible difference between output and actual needs: daily average per capita requirements of adults in largely sedentary affluent populations are no more than 2,000–2,100 kilocalories, far below the actual supplies of 3,200–4,000 kilocalories.[63] According to the FAO, the world loses almost half of all root crops, fruits, and vegetables, about a third of all fish, 30 percent of cereals, and a fifth of all oilseeds, meat, and dairy products—or at least one-third of the overall food supply.[64] And the UK's Waste and Resources Action Programme ascertained that inedible household food waste (including fruit and vegetable peelings, and bones) is only 30 percent of the total, meaning that 70 percent of wasted food was perfectly edible and was not consumed either because it spoiled or because too much of it was served.[65] Reducing food waste might seem to be much easier than reforming complex production processes, and yet this proverbial low-hanging fruit has been difficult to harvest.

Eliminating waste that takes place all along the long and complex production-processing-distribution-wholesaling-retailing-consumption chain (from fields and barns to

plates) is extremely challenging. American food balances show that the nationwide share of wasted food has remained stable during the past 40 years, despite perennial calls for improvements.[66] And higher food waste accompanied China's improving nutrition as the country moved from the precarious food supply that prevailed until the early 1980s to averaging per capita rates that are now higher than in Japan.[67]

Higher food prices should lead to lower waste, but this is not a desirable way to fix the problem in low-income countries—where food access for many disadvantaged families remains precarious and where food still claims a large share of overall family spending—while in affluent nations, where food is relatively inexpensive, this would require substantial price hikes, a policy that has no eager promoters.[68]

In well-off societies, a better way to reduce agriculture's dependence on fossil fuel subsidies is to make appeals for adopting healthy and satisfactory alternatives to today's excessively rich and meaty diets—the easiest choices being moderate meat consumption, and favoring meat that can be grown with lower environmental impact. The quest for mass-scale veganism is doomed to fail. Eating meat has been as significant a component of our evolutionary heritage as our large brains (which evolved partly because of meat eating), bipedalism, and symbolic language.[69] All our hominin ancestors were omnivorous, as are both species of chimpanzees (*Pan troglodytes* and *Pan paniscus*), the hominins closest to us in their genetic makeup; they supplement their plant diet by hunting (and sharing) small monkeys, wild pigs, and tortoises.[70]

Full expression of human growth potential on a population basis can take place only when diets in childhood and adolescence contain sufficient quantities of animal protein, first in milk and later in other dairy

products, eggs, and meat: rising post-1950 body heights in Japan, South Korea, and China, as a result of increased intake of animal products, are unmistakable testimonies to this reality.[71] Conversely, most people who become vegetarians or vegans do not remain so for the remainder of their lives. The idea that billions of humans—across the world, not only in affluent Western cities—would willfully not eat any animal products, or that there'd be enough support for governments to enforce that anytime soon, is ridiculous.

But none of this means that we could not eat much *less* meat than affluent countries have averaged during the past two generations.[72] When expressed in terms of carcass weight, annual meat supply in many high-income countries has averaged close to, or even in excess of, 100 kilograms per capita—but the best nutritional advice is that we do not have to eat more than an adult's body mass equivalent in meat per year to obtain an adequate amount of high-quality protein.[73]

While veganism is a waste of valuable biomass (only ruminants—that is cattle, sheep, and goats—can digest such cellulosic plant tissues as straw and stalks), high-level carnivory has no proven nutritional benefits: it certainly does not add any years to life expectancy, and it is a source of additional environmental stress. Meat consumption in Japan, the country with the world's highest longevity, has recently been below 30 kilograms per year; and a much less appreciated fact is that similarly low consumption rates have become fairly common in France, traditionally a nation of high meat intake. By 2013, nearly 40 percent of adult French were *petits consommateurs*, eating meat only in small amounts adding up to less than 39 kg/year, while the heavy meat consumers, averaging about 80 kg/year, made up less than 30 percent of French adults.[74]

Obviously, if all high-income countries were to follow these examples, they could reduce their crop harvests—because most of their grain harvests are not destined directly for food but for animal feed.[75] But this is not a universal option. While meat intakes in many affluent countries have been declining and could be cut even further, they have been rising rapidly in such modernizing nations as Brazil and Indonesia (where they have more than doubled since 1980) and China (where they have quadrupled since 1980).[76] Moreover, there are billions of people in Asia and Africa whose meat consumption remains minimal and whose health would benefit from more meaty diets.

Additional opportunities to reduce the dependence on synthetic nitrogenous fertilizers come on the production side—for example, improving the efficiency of nitrogen uptake by plants. But again, these opportunities are circumscribed. Between 1961 and 1980 there was a substantial decline in the share of applied nitrogen actually incorporated by crops (from 68 percent to 45 percent), then came a levelling off at around 47 percent.[77] And in China, the world's largest consumer of nitrogen fertilizer, only a third of the applied nitrogen is actually used by rice; the rest is lost to the atmosphere and to ground and stream waters.[78] Given that we are expecting at least 2 billion more people by 2050, and that more than twice as many people in the low-income countries of Asia and Africa should see further gains—both in quantity and quality—in their food supply, there is no near-term prospect for substantially reducing the global dependence on synthetic nitrogenous fertilizers.

There are obvious opportunities for running field machinery without fossil fuels. Decarbonized irrigation could become common with pumps powered by solar- or wind-generated electricity rather than by combustion

engines. Batteries with improving energy density and lower cost would make it possible to convert more tractors and trucks to electric drive.[79] And in the next chapter I will explain the alternatives to the dominant, natural gas–based synthesis of ammonia. But none of these options can be adopted either rapidly or without additional (and often substantial) investments.

These advances are, at present, a very long way off. They will depend on inexpensive renewable electricity generation backed up by adequate large-scale storage, a combination that is yet to be commercialized (and an alternative to large pumped hydro storage is yet to be invented; for more see chapter 3). A nearly perfect solution would be to develop grain or oil crops with the capabilities common to leguminous plants—that is, with their roots hosting bacteria able to convert inert atmospheric nitrogen to nitrates. Plant scientists have been dreaming about this for decades, but no releases of commercial nitrogen-fixing varieties of wheat or rice are coming anytime soon.[80] Nor is it very likely that all affluent countries and better-off modernizing economies will adopt large-scale voluntary reductions in the quantity and variety of their typical diets, or that the resources (fuel, fertilizers, and machinery) saved by such pullbacks would be transferred to Africa to improve the continent's still-dismal nutrition.

Half a century ago, Howard Odum—in his systematic examination of energy and the environment—noted that modern societies "did not understand the energetics involved and the various means by which the energies entering a complex system are fed back as subsidies indirectly into all parts of the network … industrial man no longer eats potatoes made from solar energy; now he eats potatoes partly made of oil."[81]

Fifty years later, this existential dependence is still insufficiently appreciated—but the readers of this book now

understand that our food is partly made not just of oil, but also of coal that was used to produce the coke required for smelting the iron needed for field, transportation, and food processing machinery; of natural gas that serves as both feedstock and fuel for the synthesis of nitrogenous fertilizers; and of the electricity generated by the combustion of fossil fuels that is indispensable for crop processing, taking care of animals, and food and feed storage and preparation.

Modern agriculture's higher yields are not produced with a fraction of the labor that was required just a lifetime ago because we have improved the efficiency of photosynthesis, but because we have provided better varieties of crops with better conditions for their growth by supplying them with adequate nutrients and water, by reducing weeds that compete for the same inputs, and by protecting them against pests. Concurrently, our much-increased capture of wild aquatic species has depended on expanding the extent and the intensity of fishing, and the rise of aquaculture could not happen without providing requisite enclosures and high-quality feed.

All these critical interventions have demanded substantial—and rising—inputs of fossil fuels; and even if we try to change the global food system as fast as is realistically conceivable, we will be eating transformed fossil fuels, be it as loaves of bread or as fishes, for decades to come.

3. Understanding Our Material World

The Four Pillars of Modern Civilization

Where it matters, ranking is impossible—or, at least, inadvisable. The heart is not more important than the brain; vitamin C is no less indispensable for human health than vitamin D. Food and energy supply, the two existential necessities covered in the preceding chapters, would be impossible without mass-scale mobilization of many man-made materials—metals, alloys, non-metallic and synthetic compounds—and the same is true about all our buildings and infrastructures and about all modes of transportation and communication. Of course, you would not know this if you were to judge the importance of these materials by the attention they get (or rather do not get), not only from mass media "news" but also from supposedly much more exalted economic analyses or forecasts of notable developments.

All of this coverage deals overwhelmingly with such immaterial, intangible phenomena as the annual percentage growth of GDP (how Western economists used to swoon over China's double-digit rates!), rising national debt ratios (unimportant in the world of Modern Monetary Theory, with money supply seen as unlimited), record sums poured into new initial public offerings (for such existentially critical inventions as gaming apps), the benefits of unprecedented mobile connectivity (awaiting 5G networks as something close to the second coming), or promises of artificial intelligence imminently transforming

our lives (the pandemic was an excellent demonstration of the complete emptiness of such claims).

First things first. We could have an accomplished and reasonably affluent civilization that provides plenty of food, material comforts, and access to education and health care, without any semiconductors, microchips, or personal computers: we had one until, respectively, the mid-1950s (first commercial applications of transistors), the early 1970s (Intel's first microprocessors), and the early 1980s (first larger-scale ownership of PCs).[1] And we managed, until the 1990s, to integrate economies, mobilize necessary investments, build requisite infrastructures, and connect the world by wide-body jetliners without any smartphones, social media, and puerile apps. But none of these advances in electronics and telecommunications could have taken place without the assured provision of energies and materials required to embody the inventions in myriads of electricity-consuming components, devices, assemblies, and systems ranging from tiny microprocessors to massive data centers.

Silicon (Si) made into thin wafers (the basic substrate of microchips) is the signature material of the electronic age, but billions of people could live prosperously without it; it is not an existential constraint on modern civilization. Producing large, high-purity (99.999999999 percent pure) silicon crystals that are cut into wafers is a complex, multi-step, and highly energy-intensive process: it costs two orders of magnitude more primary energy than making aluminum from bauxite, and three orders of magnitude more than smelting iron and making steel.[2] But the raw material is super-abundant (Si is the second-most common element in the Earth's crust—nearly 28 percent, compared to 49 percent for oxygen) and the annual output of electronic-grade silicon is very small compared to other

indispensable materials, recently on the order of 10,000 tons of wafers.[3]

Of course, annual consumption of a material is not the best indicator of its indispensability, but in this case the verdict is clear: as useful and as transformative as post-1950 electronic advances have been, they do not constitute the indispensable material foundations of modern civilization. And while there can be no indisputable ordering of our material needs based on claims of their importance, I can offer a defensible ranking that considers their indispensability, ubiquity, and the demand size. Four materials rank highest on this combined scale, and they form what I have called the four pillars of modern civilization: cement, steel, plastics, and ammonia.[4]

Physically and chemically, these four materials are distinguished by an enormous diversity of properties and functions. But despite these differences in attributes and specific uses, they share more than their indispensability for the functioning of modern societies. They are needed in larger (and still increasing) quantities than are other essential inputs. In 2019, the world consumed about 4.5 billion tons of cement, 1.8 billion tons of steel, 370 million tons of plastics, and 150 million tons of ammonia, and they are not readily replaceable by other materials—certainly not in the near future or on a global scale.[5]

As noted in chapter 2, only an impossibly complete recycling of all wastes voided by grazing animals could, together with near-perfect recycling of all other sources of organic nitrogen, provide the amount of nitrogen annually applied to crops in ammonia-based fertilizers. Meanwhile, there are no other materials that can rival the combination of malleability, durability, and light weight offered by many kinds of plastics. Similarly, even if we were able to produce identical masses of construction lumber or quarried stone, they could not equal the strength, versatility, and durability

of reinforced concrete. We would be able to build pyramids and cathedrals but not elegant long spans of arched bridges, giant hydroelectric dams, multilane roads, or long airport runways. And steel has become so ubiquitous that its irreplaceable deployment determines our ability to extract energies, produce food, and shelter populations, as well as ensuring the extent and quality of all essential infrastructures: no metal could, even remotely, become its substitute.

Another key commonality between these four materials is particularly noteworthy as we contemplate the future without fossil carbon: the mass-scale production of all of them depends heavily on the combustion of fossil fuels, and some of these fuels also supply feedstocks for the synthesis of ammonia and for the production of plastics.[6] Iron ore smelting in blast furnaces requires coke made from coal (and also natural gas); energy for cement production comes mostly from coal dust, petroleum coke, and heavy fuel oil. The vast majority of simple molecules that are bonded in long chains or branches to make plastics are derived from crude oils and natural gases. And in the modern synthesis of ammonia, natural gas is both the source of hydrogen and processing energy.

As a result, global production of these four indispensable materials claims about 17 percent of the world's primary energy supply, and 25 percent of all CO_2 emissions originating in the combustion of fossil fuels—and currently there are no commercially available and readily deployable mass-scale alternatives to displace these established processes.[7] Although there is no shortage of proposals and experimental techniques to produce these materials without relying on fossil carbon—ranging from new catalyses for ammonia synthesis to hydrogen-based steelmaking—none of those alternatives has been commercialized, and even if the aggressive pursuit of non-

carbon options were to take place, it would obviously take decades to displace the existing capacities that are producing, at affordable prices, at annual rates of hundreds of millions to billions of tons.[8]

In order to truly appreciate the importance of these materials, I will explain their basic properties and functions, outline briefly the histories of technical advances and epoch-making inventions that made them abundantly available and affordable, and describe the enormous variety of their modern uses. I will start with ammonia—because of its indispensability for feeding a growing share of the global population—and proceed, in the order of annual global mass production, to plastics, steel, and cement.

Ammonia: the gas that feeds the world

Of the four substances (and despite my dislike of rankings!), it is ammonia that deserves the top position as our most important material. As explained in the previous chapter, without its use as the dominant nitrogen fertilizer (directly or as feedstock for the synthesis of other nitrogenous compounds), it would be impossible to feed at least 40 percent and up to 50 percent of today's nearly 8 billion people. Simply restated: in 2020, nearly 4 billion people would not have been alive without synthetic ammonia. No comparable existential constraints apply to plastics or steel, nor to the cement that is required to make concrete (nor, as already noted, to silicon).

Ammonia is a simple inorganic compound of one nitrogen and three hydrogens (NH_3), which means that nitrogen makes up 82 percent of its mass.[9] At atmospheric pressure it is an invisible gas with a characteristic pungent smell of unflushed toilets or decomposing animal manure. Inhaling it in low concentrations causes headaches, nausea, and

vomiting; higher concentrations irritate the eyes, nose, mouth, throat, and lungs; and inhalation of very high concentrations can be instantly fatal. In contrast, ammonium (NH_4^+, ammonium ion), formed by the dissolution of ammonia in water, is non-toxic and does not easily penetrate cell membranes.

Synthesizing this simple molecule was surprisingly challenging. The history of inventions includes famous cases of accidental discoveries; in this chapter on materials, the story of Teflon might be the most apposite example. In 1938, Roy Plunkett, a chemist at DuPont, and his assistant Jack Rebok formulated tetrafluoroethylene as a new refrigerant compound. After storing it in refrigerated cylinders, they found that the compound underwent unexpected polymerization, turning into polytetrafluoroethylene, a white, waxy, slippery powder. After the Second World War, Teflon became one of the best-known synthetic materials, and perhaps the only one that made it into political jargon (we have Teflon presidents, but seemingly no Bakelite presidents—though there was an Iron Lady).[10]

The synthesis of ammonia from its elements belongs to the opposite class of discoveries—those with a clearly defined goal pursued by some of the best-qualified scientists and eventually reached by a persevering researcher. The need for this breakthrough was obvious. Between 1850 and 1900 the total population of the industrializing countries of Europe and North America grew from 300 million to 500 million, and rapid urbanization helped to drive a dietary transition from a barely adequate grain-dominated supply to generally higher food energy intakes containing more animal products and sugar.[11] Yields remained stagnant but the dietary shift was supported by an unprecedented expansion of cropland: between 1850 and 1900, about 200 million

hectares of North and South American, Russian, and Australian grasslands were converted to grain fields.[12]

Maturing agronomic science made it clear that the only way to secure adequate food for the larger populations of the 20th century was to raise yields by increasing the supply of nitrogen and phosphorus, two key plant macronutrients. The mining of phosphates (first in North Carolina and then in Florida) and their treatment by acids opened the way to a reliable supply of phosphatic fertilizers.[13] But, there was no comparably assured source of nitrogen. The mining of guano (accumulated bird droppings, moderately rich in nitrogen) on dry tropical islands had quickly exhausted the richest deposits, and the rising imports of Chilean nitrates (the country has extensive sodium nitrate layers in its arid northern regions) were insufficient to meet future global demand.[14]

The challenge was to ensure that humanity could secure enough nitrogen to sustain its expanding numbers. The need was explained in 1898 in the clearest possible manner by William Crookes, chemist and physicist, to the British Association for the Advancement of Science, in his presidential address dedicated to the so-called wheat problem. He warned that “all civilized nations stand in deadly peril of not having enough to eat,” but he saw the way out: science coming to the rescue, tapping the practically unlimited mass of nitrogen in the atmosphere (present as the unreactive molecule N_2) and converting it into compounds assimilable by plants. He rightly concluded that this challenge “differs materially from other chemical discoveries which are in the air, so to speak, but are not yet matured. The fixation of nitrogen is vital to the progress of civilized humanity. Other discoveries minister to our increased intellectual comfort, luxury, or convenience; they serve to make life easier, to hasten the acquisition of

wealth, or to save time, health, or worry. The fixation of nitrogen is a question of the not far-distant future."[15]

Crookes's vision was realized just 10 years after his address. The synthesis of ammonia from its elements, nitrogen and hydrogen, was pursued by a number of highly qualified chemists (including Wilhelm Ostwald, a Nobel Prize winner in chemistry in 1909), but in 1908 Fritz Haber—at that time professor of physical chemistry and electrochemistry at the Technische Hochschule in Karlsruhe—working with his English assistant Robert Le Rossignol and supported by BASF, Germany's (and the world's) leading chemical enterprise, was the first researcher to succeed.[16] His solution relied on using an iron catalyst (a compound that increases the rate of a chemical reaction without altering its own composition) and deploying unprecedented reaction pressure.

It was a no smaller challenge to scale up Haber's experimental success to a commercial enterprise. Under the leadership of Carl Bosch, an expert in chemical as well as metallurgical engineering who joined BASF in 1899, success was achieved in just four years. The world's first ammonia synthesis plant began to operate at Oppau in September 1913, and the term "Haber-Bosch process" has endured ever since.[17]

Within a year, the Oppau plant's ammonia was diverted to make the nitrate needed to produce explosives for the German army. A new, much larger, ammonia factory was completed in 1917 in Leuna, but it did little to prevent Germany's defeat. The postwar expansion of ammonia synthesis proceeded despite the economic crisis of the 1930s, and continued during the Second World War, but by 1950 synthetic ammonia was still far less common than animal manures.[18]

The next two decades saw an eightfold increase of ammonia production to just over 30 million tons a year as

synthetic fertilizer enabled the Green Revolution (starting during the 1960s)—the adoption of new superior wheat and rice varieties that, when supplied with adequate nitrogen, produced unprecedented yields. The key innovations behind this rise were the use of natural gas as the source of hydrogen, and the introduction of efficient centrifugal compressors and better catalysts.[19]

Then, as in so many other instances of modern industrial development, post-Mao China took the lead. Mao was responsible for the deadliest famine in history (1958–1961), and when he died in 1976 the country's per capita food supply was hardly better than when he had proclaimed the existence of the communist state in 1949.[20] China's first major business deal to follow President Nixon's trip to Beijing in 1972 was an order for 13 of the world's most advanced ammonia-urea plants from M. W. Kellogg of Texas.[21] By 1984 the country abolished urban food rationing, and by the year 2000 its average daily per capita food supply was higher than Japan's.[22] The only way to make this happen was by breaking the country's nitrogen barrier and raising the annual grain harvest to more than 650 million tons a year.

The best account of recent nitrogen flows in China's agriculture shows that about 60 percent of the nutrient available to the country's crops comes from synthetic ammonia: feeding three out of five of the Chinese population thus depends on the synthesis of this compound.[23] The corresponding global mean is about 50 percent. This dependence easily justifies calling the Haber-Bosch synthesis of ammonia perhaps the most momentous technical advance in history. Other inventions, as William Crookes correctly judged, minister to our comforts, convenience, luxury, wealth, or productivity, and others yet save our lives from premature death and chronic disease—but without the synthesis of ammonia, we could not ensure

the very survival of large shares of today's and tomorrow's population.[24]

I hasten to add that the 50 percent of humanity dependent on ammonia is not an immutable approximation. Given prevailing diets and farming practices, synthetic nitrogen feeds half of humanity—or, everything else being equal, half of the world's population could not be sustained without synthetic nitrogenous fertilizers. But the share would be lower if the affluent world converted to the largely meatless Indian diet, and it would be higher if the entire world ate as well as the Chinese do today, to say nothing about the universal adoption of the American diet.[25] We could also reduce our dependence on nitrogenous fertilizers by cutting our food waste (as we saw earlier) and by using the fertilizers more efficiently.

About 80 percent of global ammonia production is used to fertilize crops; the rest is used to make nitric acid, explosives, rocket propellants, dyes, fibers, and window and floor cleaners.[26] With proper precautions and special equipment, ammonia can be applied directly to fields;[27] but the compound is mostly used as the indispensable feedstock for producing solid and liquid nitrogenous fertilizers. Urea, the solid fertilizer with the highest nitrogen content (46 percent), dominates.[28] Recently, it has accounted for about 55 percent of all nitrogen applied to the world's fields, and it is widely used in Asia to support the rice and wheat harvests of China and India—the world's two most populous nations—and to guarantee good yields in five other Asian countries with more than 100 million inhabitants.[29]

Less important nitrogenous fertilizers include ammonium nitrate, ammonium sulfate, and calcium ammonium nitrate, as well as various liquid solutions. Once the nitrogen fertilizers are applied to fields, it is almost impossible to control their natural losses due to volatilization (from

ammonia compounds), leaching (nitrates are readily soluble in water), and denitrification (the bacteria-driven conversion of nitrates back to nitrogen molecules in the air).[30]

There are now only two effective direct solutions to field losses of nitrogen: the spreading of expensive slow-release compounds; and, more practically, turning to precision farming and applying fertilizers only as needed based on analyses of the soil.[31] As already noted, indirect measures —including higher food prices and reduced meat consumption—could be effective but are not highly popular. As a result, it is unlikely that any realistically conceivable combination of these solutions can bring about a radical change to the global consumption of nitrogenous fertilizers. About 150 megatons of ammonia are now synthesized annually, with about 80 percent used as fertilizer. Nearly 60 percent of that fertilizer is applied in Asia, about a quarter in Europe and North America, and less than 5 percent in Africa.[32] Most rich countries certainly could, and should, pull back on their high application rates (their average per capita food supply is already too high), and China and India —two heavy users—have many opportunities to reduce their excessive fertilizer applications.

But Africa, the continent with the fastest-growing population, remains deprived of the nutrient and is a substantial food importer. Any hope for its greater food self-sufficiency rests on the increased use of nitrogen: after all, the continent's recent usage of ammonia has been less than a third of the European mean.[33] The best (and long-sought) solution to boost nitrogen supply would be to endow non-leguminous plants with nitrogen-fixing capabilities, a promise genetic engineering is yet to deliver on, while a less radical option—inoculating seeds with a nitrogen-fixing bacterium—is a recent innovation whose eventual commercial extent is still unclear.

Plastics: diverse, useful, troublesome

Plastics are a large group of synthetic (or semisynthetic) organic materials whose common quality is that they are fit for forming (molding). Synthesis of plastics begins with monomers, simple molecules that can be bonded in long chains or branches to make polymers. The two key monomers, ethylene and propylene, are produced by the steam cracking (heating to 750–950ºC) of hydrocarbon feedstocks, and hydrocarbons also energize subsequent syntheses.[34] The malleability of plastics makes it possible to form them by casting, pressing, or extruding, and they create shapes ranging from thin film to heavy-duty pipes and from feather-light bottles to massive and sturdy waste containers.

Global output has been dominated by thermoplastics—polymers that soften readily when heated and harden again when cooled. Low- and high-density polyethylene (PE) now accounts for more than 20 percent of the world's plastic polymers, polypropylene (PP) for about 15 percent, and polyvinyl chloride (PVC) for more than 10 percent.[35] In contrast, thermoset plastics (including polyurethanes, polyimides, melamine, and urea-formaldehyde) resist softening when heated.

Some thermoplastics combine low specific gravity (light weight) with fairly high hardness (durability). Durable aluminum weighs only a third as much as carbon steel, but PVC density is less than 20 percent and PP less than 12 percent compared to steel; and while the ultimate tensile strength of structural steel is 400 megapascals, that of polystyrene is, at 100 megapascals, twice that of wood or glass and only 10 percent less than that of aluminum.[36]

This combination of low weight and high strength has made thermoplastics the preferred choice for such applications as heavy-duty pipes and flanges, anti-skid

surfaces, and chemical tanks. Thermoplastic polymers have found widespread uses in car interiors and exteriors (PP bumpers, PVC dashboards and car parts, polycarbonate headlight lenses); light high-temperature or flame-retardant thermoplastics (polycarbonate, PVC/acrylic blends) dominate the interiors of modern aircraft; and carbon-fiber reinforced plastics (composite materials) are now used for building aircraft airframes.[37]

The first plastics, most notably celluloid made from cellulose nitrate and camphor (later the highly flammable mainstay of the film industry, displaced only during the 1950s), were produced in small amounts during the last three decades of the 19th century, but the first thermoset material (molded at 150–160ºC) was prepared in 1907 by Leo Hendrik Baekeland, a Belgian chemist working in New York.[38] His General Bakelite Company, founded in 1910, was the first industrial producer of a plastic that was molded into pieces ranging from electric insulators to black rotary dial telephones and, during the Second World War, used for parts in lightweight weapons. Meanwhile, cellophane was invented in 1908 by Jacques Brandenberger.

During the interwar years came the first large-scale syntheses of PVC, which was discovered as early as 1838 but never used outside a laboratory, and DuPont in the US, Imperial Chemical Industries (ICI) in the UK, and IG Farben in Germany funded (very successfully) research dedicated to the discovery of new plastic materials.[39] Before the Second World War this resulted in the commercial production of cellulose acetate (now in absorbent cloths and wipes), neoprene (synthetic rubber), polyester (for fabrics and upholstery), polymethyl methacrylate (otherwise known as plexiglass, and now even more commonly used thanks to the COVID-induced resurgence of dividers and shields). Nylon has been produced since 1938

(toothbrush bristles and stockings were the first commercial products; it now goes into products ranging from fishing nets to parachutes) and—as already noted—so has Teflon, a ubiquitous non-stick coating. The affordable production of styrene also began during the 1930s, and the material is now mostly used as polystyrene, or PS, in packing materials and disposable cups and plates.

IG Farben introduced polyurethanes in 1937 (furniture foams, insulation); ICI used very high pressure to synthesize polyethylene (used in packaging and insulation) and began producing methyl methacrylate (for adhesives, coatings, and paints) in 1933. Polyethylene terephthalate (PET)—since the 1970s the scourge of the planet in the form of discarded drink bottles—was patented in 1941 and mass-produced since the early 1950s (the infernal PET bottle was patented in 1973).[40] The best-known post–Second World War additions include polycarbonates (for optical lenses, windows, rigid covers), polyimide (for medical tubing), liquid crystal polymers (above all for electronics), and such famous DuPont trademarks as Tyvek® (1955), Lycra® (1959), and Kevlar® (1971).[41] By the end of the 20th century, 50 different kinds of plastics were on the global market, and this new diversity—together with rising demand for the most commonly used compounds (PE, PP, PVC, and PET)—led to exponential growth in demand.

Global production rose from only about 20,000 tons in 1925 to 2 million tons by 1950, 150 million tons by the year 2000, and about 370 million tons by 2019.[42] The best way to appreciate the ubiquity of plastic materials in our daily lives is to note how many times a day our hands touch, our eyes see, our bodies rest on, and our feet tread on a plastic: you might be astonished at the frequency of such encounters! As I am typing this: the keys of my Dell laptop and a wireless mouse under my right palm are made of

acrylonitrile butadiene styrene, I sit on a swivel chair upholstered in a polyester fabric, and its nylon wheels rest on a polycarbonate carpet protection mat that covers a polyester carpet …

An industry that started by supplying small industrial parts (a gear-lever knob in the 1916 Rolls-Royce was the first application) and various household items has vastly expanded those two original commercial niches (most prominently with consumer electronics adding billions of new plastic-dependent items every year) and has added mass-scale applications ranging from car bodies and complete interiors of airplanes to large-diameter pipes.

But plastics have found their most indispensable roles in health care in general and in the hospital treatment of infectious diseases in particular. Modern life now begins (in maternity wards) and ends (in intensive care units) surrounded by plastic items.[43] And those people who had no prior understanding of plastics' role in modern health care got their lesson thanks to COVID-19. The pandemic has taught us this in often drastic ways, as doctors and nurses in North America and Europe ran out of personal protective equipment (PPE)—disposable gloves, masks, shields, hats, gowns, and booties—and as governments outbid each other in order to airlift limited (and highly overpriced) supplies from China, to which the Western producers of PPE, obsessed with cutting costs, had relocated most of their production lines, creating dangerous yet entirely avoidable supply shortages.[44]

Plastic items in hospitals are made above all from different kinds of PVC: flexible tubes (used for feeding patients, delivering oxygen, and monitoring blood pressure), catheters, intravenous containers, blood bags, sterile packaging, assorted trays and basins, bedpans and bed rails, thermal blankets, and countless pieces of labware. PVC is now the primary component in more than a

quarter of all health-care products, and in modern homes it is present in wall and roof membranes, window frames, blinds, hoses, cable insulation, electronic components, a still-growing array of office supplies, and toys—and as credit cards used to purchase all of the above.[45]

Recent years have seen rising concerns about plastic pollution on land and even more so in the ocean, coastal waters, and on beaches. I will return to this in the environmental chapter, but this irresponsible dumping of plastics is not an argument against the proper use of these diverse and often truly indispensable synthetic materials. Moreover, as far as microfibers go, it is wrong to assume, as so many do, that most of their presence in ocean water derives from the wear and tear of synthetic textiles. Those polymers now account for two-thirds of global fiber output, but a study of seawater samples showed that oceanic fibers are mainly (>90 percent) of natural origin.[46]

Steel: ubiquitous and recyclable

Steels (the plural is more accurate as there are more than 3,500 varieties) are alloys dominated by iron (Fe).[47] Pig or cast iron, the hot metal produced by blast furnaces, is typically 95–97 percent iron, 1.8–4 percent carbon, and 0.5–3 percent silicon, with mere traces of a few other elements.[48] Its high carbon content makes it brittle, it has low ductility (the ability to stretch), and its tensile strength (resistance to breaking under tension) is inferior to that of bronze or brass. Preindustrial steel was made in Asia and in Europe by a variety of artisanal methods—that is, always laboriously and expensively—and hence it was never available for common use.[49]

Modern steels are made from cast iron by reducing its high carbon content to 0.08–2.1 percent by weight. Steel's physical properties handily beat those of the hardest

stones, as well as those of the other two most common metals. Granite has a similar compressive strength (capacity to withstand loads that shorten the material) but its tensile strength is an order of magnitude lower: granite columns bear their load as well as steel, but steel beams can bear loads 15–30 times higher.[50] Steel's typical tensile strength is about seven times that of aluminum and nearly four times that of copper; its hardness is, respectively, four and eight times higher; and it is heat resistant—aluminum melts at 660ºC, copper at 1,085ºC, steel only at 1,425ºC.

Steels come in four major categories.[51] Carbon steels (90 percent of all steels on the market are 0.3–0.95 percent carbon) are everywhere, from bridges to fridges and from gears to shears. Alloy steels include varying shares of one or more elements (most commonly manganese, nickel, silicon, and chromium, but also aluminum, molybdenum, titanium, and vanadium), added in order to improve their physical properties (hardness, strength, ductility). Stainless steel (10–20 percent chromium) was made for the first time only in 1912 for kitchenware, and is now widely used for surgical instruments, engines, machine parts, and in construction.[52] Tool steels have a tensile strength 2–4 times higher than the best construction steels, and they are used for cutting steel and other metals for dies (for stamping or extrusion of other metals or plastics), as well as for manual cutting and hammering. And all steels (except for some stainless varieties) are magnetic and hence suitable for making electric machinery.

Steel determines the look of modern civilization and enables its most fundamental functions. This is the most widely used metal and it forms countless visible and invisible critical components of today's world. Moreover, nearly all other metallic and non-metallic products we use have been extracted, processed, shaped, finished, and distributed with tools and machines made of steel, and no

mode of today's mass transportation could function without steel. Naked steel is ubiquitous inside and outside of our homes, in items small (cutlery, knives, cooking pots, pans, kitchen gadgets, garden tools) and large (appliances, lawnmowers, bicycles, cars).

Before large city buildings go up, you can see massive steel pile-driving machines ramming in steel or steel-reinforced concrete for the foundations, and then the site is dominated for months by tall steel construction cranes. In 1954, New York's Socony-Mobil Building was the first skyscraper entirely clad in stainless steel, and more recently Dubai's 828-meter-tall Burj Khalifa uses textured stainless-steel spandrel panels and vertical tubular steel pins.[53] Steel is both the critical structural component and the design feature of many elegant cantilevered and suspension bridges:[54] in San Francisco's Golden Gate Bridge it is constantly repainted orange;[55] Japan's Akashi Kaikyō Bridge has the world's longest central span, at nearly 2 kilometers, and its steel towers support woven steel cables that are 1.12 meters in diameter.[56]

City streets are lined by regularly spaced lighting poles made from hot-dip galvanized and powder-coated steel for rust resistance; rolled steel makes roadside traffic signs and structures for overhead signage; and corrugated steel is used for crash barriers. Steel towers support thick steel wires to lift downhill skiers by the millions and to carry visitors in cable cars to tall peaks. Radio and TV towers (guyed masts) broke many height records for man-made structures, and modern landscapes contain seemingly endless repetitions of high-voltage electricity transmission towers. Two recent, prominent additions are dizzyingly tall guyed towers (to carry mobile telephone signals) and groups of large wind turbine towers, both onshore and offshore; and the most massive steel assemblies in the ocean are huge oil and gas production platforms.[57]

By weight, steel is nearly always the largest part of transportation equipment. Jetliners are a major exception (aluminum alloys and composite fibers dominate) and steel is about 10 percent of the plane's weight, in engines and the landing gear.[58] The average car contains about 900 kilograms of steel.[59] With nearly 100 million motor vehicles produced per year, this translates to about 90 million tons of the metal—about 60 percent of it being high-strength steel that makes vehicles 26–40 percent lighter than conventional steel.[60] Although modern high-speed trains (aluminum bodies, plastic interiors) are only about 15 percent steel (wheels, axles, bearings, and motors), their operation requires dedicated tracks using heavier-than-normal steel rails.[61]

Ship hulls of oil and liquefied-gas tankers and of bulk carriers transporting ores, grains, or cement are made by bending large plates of high-tensile steel into desired shapes and welding them together. But the greatest revolution in postwar shipping has been the deployment of container ships (for more detail, see chapter 4). They transport cargo in steel crates of standardized dimensions.[62] These steel boxes are about 2.5 meters high and wide (length varies) and are stacked inside the hulls and high above the deck. Chances are that everything you wear was carried to its final point of sale in a steel container that started its journey in a factory in Asia.

And how were all these tools and machines made? Mostly by other machines and assemblies made largely of steel and which do casting, forging, rolling, subtractive machining (turning, milling, hollowing, and drilling), bending, welding, sharpening, and cutting, the latter operations being possible thanks to amazing tool steels that cut carbon steels as easily as a knife goes through soft butter. And the machines that make machines are mostly powered by electricity, whose generation (and hence also

the entire universe of electronics, computing, and telecommunication) is impossible without steel: tall boilers crammed with steel tubes and filled with pressurized water; nuclear reactors enclosed in thick pressure vessels; expanding steam rotating large turbines whose long shafts are machined from rough, massive steel forgings.

Steel that is out of sight underground includes fixed and moving props in deep mines, and millions of kilometers of exploratory, casing, and production pipes in crude oil and natural gas wells. The oil and gas industry also depends on steel buried close to the surface (1–2 meters deep) in gathering, transmission, and distribution pipelines. Trunk lines use pipes with diameters of more than 1 meter, while distribution gas lines may be just 5 centimeters across.[63] Crude oil refineries are essentially forests of steel, with tall distillation columns, catalytic crackers, extensive piping, and storage vessels. Finally, I must note how steel saves lives in hospitals (from centrifuges and diagnostic machines to stainless-steel scalpels, surgical hooks, and retractors), and how it also kills: armies and fleets with their vast arrays of weapons are nothing but enormous repositories of steel dedicated to destruction.[64]

Can we secure the required massive supply of steel and how consequential is the metal's global production? Do we have adequate supplies of iron ore to keep making steel for many generations to come? Can we produce enough of it in order to build modern infrastructures and raise the standards of living in low-income countries, where average per capita steel consumption is even lower than it was in the affluent economies a century ago? Is steelmaking environmentally friendly or is it exceptionally damaging? Can we produce the metal without using any fossil fuels?

The answer to the second question is unequivocally positive. Iron is the Earth's dominant element by mass because it is heavy (nearly eight times as heavy as water)

and because it forms the planet's core.[65] But it is also abundant in the Earth's crust: only three elements (oxygen, silicon, and aluminum) are more common; iron, with nearly 6 percent, ranks fourth.[66] Annual production of iron ore—led by Australia, Brazil, and China—is now about 2.5 billion tons; world resources are in excess of 800 billion tons, containing nearly 250 billion tons of the metal. This is a resource/production (R/P) ratio of more than 300 years, far beyond any conceivable planning horizons (the R/P ratio for crude oil is just 50 years).[67]

Moreover, steel is readily recycled by melting it in an electric arc furnace (EAF)—a massive cylindrical heat-resistant container made of heavy steel plates (lined with magnesium bricks), with a removable dome-like water-cooled lid through which three massive carbon electrodes are inserted. After loading the steel scrap, the electrodes are lowered into it, and electric current passing through them forms an arc whose high temperature (1,800ºC) easily melts the charged metal.[68] However, their electricity demand is enormous: even a highly efficient modern EAF needs as much electricity every day as an American city of about 150,000 people.[69]

Vehicle recycling is preceded by draining all fluids, ripping out upholstery, and removing batteries, servomotors, tires, radios, and working engines, as well as plastic, rubber, glass, and aluminum components. Car crushers then flatten the stripped bodies preparatory to shredding. By far the most challenging recycling operation is the dismantling of large ocean-going vessels, done mostly on beaches in Pakistan (Gadani, northwest of Karachi), India (Alang in Gujarat), and Bangladesh (near Chittagong). Stripped hulls made of heavy steel plates must be cut by gas and plasma torches—dangerous and polluting work done too often by men working without proper protective gear.[70]

Affluent economies now recycle nearly all of their automotive scrap, have a similarly high rate (>90 percent) for reusing structural steel beams and plates, and only a slightly lower rate for recycling household appliances, and the US has recently recycled more than 65 percent of reinforcement bars in concrete, a rate similar to the recycling of beverage and food steel cans.[71] Steel scrap has become one of the world's most valuable export commodities, as countries with a long history of steel production and with plenty of accumulated scrap sell the material to expanding producers. The EU is the largest exporter, followed by Japan, Russia, and Canada; and China, India, and Turkey are the top buyers.[72] Recycled steel accounts for almost 30 percent of the metal's total annual output, with national shares ranging from 100 percent for several small steel producers to almost 70 percent in the US, about 40 percent in the EU, and to less than 12 percent in China.[73]

This means that primary steelmaking still dominates, producing more than twice as much hot metal every year as is recycled—almost 1.3 billion tons in 2019. The process starts with blast furnaces (tall iron and steel structures lined with heat-resistant materials) that produce liquid (cast or pig) iron by smelting iron ore, coke, and limestone.[74] The second step—reducing cast iron's high carbon content and producing steel—takes place in a BOF (basic oxygen furnace; the adjective refers to the chemical properties of the produced slag). The process was invented during the 1940s and was rapidly commercialized after the mid-1950s.[75] Today's BOFs are large, pear-shaped vessels with an open top used to charge up to 300 tons of hot iron, which gets blasted with oxygen blown in from both top and bottom. The reaction reduces the metal's carbon content (to as little as 0.04 percent) in about 30 minutes. The combination of a blast furnace and a basic oxygen furnace

is the basis of modern integrated steelmaking. Final steps include the transfer of hot steel to continuous casting machines to produce steel slabs, billets (square or rectangular shapes), and strips that are eventually converted into final steel products.

Ironmaking is highly energy-intensive, with about 75 percent of the total demand claimed by blast furnaces. Today's best practices have a combined demand of just 17–20 gigajoules per ton of finished product; less efficient operations require 25–30 GJ/t.[76] Obviously, the energy cost of secondary steel made in EAFs is much lower than the cost of integrated production: today's best performance is just above 2 GJ/t. To this must be added the energy costs of rolling the metal (mostly 1.5–2 GJ/t), and hence the representative global rates for the overall energy cost may be about 25 GJ/t for integrated steelmaking and 5 GJ/t for recycled steel.[77] The total energy requirement of global steel production in 2019 was about 34 exajoules, or about 6 percent of the world's primary energy supply.

Given the industry's dependence on coking coal and natural gas, steelmaking has been also a major contributor to the anthropogenic generation of greenhouse gases. The World Steel Association puts the average global rate at 500 kilograms of carbon per ton, with recent primary steelmaking emitting about 900 megatons of carbon a year, or 7–9 percent of direct emissions from the global combustion of fossil fuels.[78] But steel is not the only major material responsible for a significant share of CO_2 emissions: cement is much less energy-intensive, but because its global output is nearly three times that of steel, its production is responsible for a very similar share (about 8 percent) of emitted carbon.

Concrete: a world created by cement

Cement is the indispensable component of concrete, and it is produced by heating (to at least 1,450ºC) ground limestone (a source of calcium) and clay, shale, or waste materials (sources of silicon, aluminum, and iron) in large kilns—long (100–220 meters) inclined metal cylinders.[79] This high-temperature sintering produces clinker (fused limestone and aluminosilicates) that is ground to yield fine, powdery cement.

Concrete consists largely (65–85 percent) of aggregates and also water (15–20 percent).[80] Finer aggregates such as sand result in stronger concrete, but need more water in the mix than do coarser aggregates that use different sizes of gravel. The mixture is held together by cement—typically 10–15 percent of concrete's final mass—whose reaction with water first sets the mixture and then hardens it.

The result is now the most massively deployed material of modern civilization, hard and heavy and able to withstand decades of punishing use, particularly when it is reinforced with steel. Plain concrete is fairly good in compression (and the best modern varieties are five times stronger than those of two generations ago)—but weak in tension.[81] Structural steel has tension strength up to 100 times higher, and different types of reinforcing (steel mesh, steel bars, glass or steel fibers, PP) have been used to narrow this huge gap.

Since 2007, most of humanity has lived in cities made possible by concrete. Of course, there are plenty of other materials in urban buildings: skyscrapers have steel skeletons covered by glass or metal; detached houses in North American suburbs are made of wood (studs, plywood, particle board) and gypsum drywall (and are often sheathed in brick or stone); and engineered lumber is now used to build apartments many stories high.[82] But skyscrapers and tall apartment buildings stand on concrete piles, concrete goes not only into foundations and

basements but also into many walls and ceilings, and it is ubiquitous in all urban infrastructures—from buried engineering networks (large pipes, cable channels, sewers, subway foundations, tunnels) to aboveground transportation infrastructure (sidewalks, roads, bridges, shipping piers, airport runways). Modern cities—from São Paulo and Hong Kong (with their multistoried apartment towers) to Los Angeles and Beijing (with their extensive networks of freeways)—are embodiments of concrete.

Roman cement was a mixture of gypsum, quicklime, and volcanic sand, and it proved to be an excellent and durable material for large structures, including expansive vaults. The Pantheon, intact after nearly two millennia (it was completed in 126 CE) still spans a greater distance than any other structure made of non-reinforced concrete.[83] But the preparation of modern cement was patented only in 1824 by Joseph Aspdin, an English bricklayer. His hydraulic mortar was made by firing limestone and clay at high temperatures: lime, silica, and alumina present in these materials are vitrified or transformed into a glass-like substance, whose grinding produced Portland cement.[84] Aspdin chose that name (still widely used today) because once hardened, and after reacting with water, the glassy clinker had a color similar to limestone from the Isle of Portland in the English Channel.

As already noted, the new material was excellent in compression, and today's best concretes can withstand pressure of more than 100 megapascals, which is about the weight of an African bull elephant balanced on a coin.[85] Tension is a different matter: a pulling force of just 2 to 5 megapascals (less than it takes to tear human skin) can break concrete apart. That is why the large-scale commercial adoption of concrete in construction took place only after gradual advances in steel reinforcement made it suitable for structural parts subject to high tension.

During the 1860s and 1870s, the first reinforcing patents were filed by François Coignet and Joseph Monier in France (Monier, a gardener, began to use iron mesh to reinforce his planters), but the real breakthrough came in 1884 with Ernest Ransome's reinforcing steel bars.[86] The earliest designs of modern cement rotary kilns, where the minerals are vitrified at temperatures of up to 1,500ºC, appeared during the 1890s and made it possible to use affordable concrete in large projects. The sixteen-story Ingalls Building in Cincinnati became the world's first reinforced concrete skyscraper in 1903.[87] Just three years later, Thomas Edison became convinced that concrete should replace wood in the building of American detached houses, and began to design and cast in place concrete homes in New Jersey; in 1911 he tried to revive the failed project by also offering cheap concrete furniture, including entire bedroom sets, and even made a phonograph, one of his favorite inventions, out of concrete.[88]

At the same time, in contrast to Edison's failure, Robert Maillart, a Swiss engineer, pioneered a concrete construction trend that is still going strong: reinforced concrete bridges, starting with the relatively short Zuoz in 1901 and Tavanasa in 1906. His most famous design, the bold Salginatobel arch above an Alpine ravine, was completed in 1930 and is now an International Historic Civil Engineering Landmark.[89] Early concrete designs were also favored by architects Auguste Perret in France (elegant apartments and the Théâtre des Champs-Élysées) and Frank Lloyd Wright in the US. Wright's most famous interwar concrete designs were Tokyo's Imperial Hotel, finished just before the 1923 earthquake leveled the city and damaged the new structure, and Fallingwater in Pennsylvania, completed in 1939. The Guggenheim Museum in New York was his last famous concrete design, completed in 1959.[90]

The tensile strength of reinforcing steel was further improved by pouring concrete into forms whose wires or bars were tensioned just before pouring the concrete (pre-stressing, with end anchors that are used to tension the steel and are released once the concrete bonds with the metal) or after it (post-stressing, with steel tendons locked in place inside protective sleeves). The first major pre-stressed design, Eugène Freyssinet's Plougastel Bridge near Brest, was finished in 1930.[91] With its bold, white, sail-like design, Jørn Utzon's Sydney Opera House (built between 1959 and 1973) is perhaps the world's most famous pre-stressed concrete strucuture.[92] Pre-stressing is now common, and the longest reinforced concrete bridges are not crossing rivers or ravines but rather railroad viaducts for high-speed trains. The record goes to the 164.8-kilometer Danyang–Kunshan Grand Bridge in China (completed in 2010), part of the Beijing–Shanghai high-speed railway.[93]

Reinforced concrete is now inside every large modern building and every transportation infrastructure, from port piers to segmental rings installed by modern tunnel-boring machines (under the Channel and the Alps). The standard configuration of the US Interstate Highway System is a layer of about 28 centimeters of non-reinforced concrete on top of a twice-as-thick layer of natural aggregates (stones, gravel, sand)—and the entire Interstate system contains about 50 million tons of cement, 1.5 billion metric tons of aggregates, and only about 6 million tons of steel (for structural support and culvert pipes).[94] Airport runways (up to 3.5 kilometers long) have reinforced concrete foundations, deepest (up to 1.5 meters) in the touchdown zone to handle the repeated pounding of hundreds of thousands of landings every year by airplanes weighing up to about 380 tons (the Airbus 380). For example, Canada's longest runway (4.27 kilometers, in Calgary) required more

than 85,000 cubic meters of concrete and 16,000 tons of reinforcing steel.[95]

But by far the most massive structures built of reinforced concrete are the world's largest dams. The era of these megastructures began during the 1930s with the construction of the Hoover Dam on the Colorado River and the Grand Coulee Dam on the Columbia River. The vertiginous Hoover Dam, located in a gorge southeast of Las Vegas, required about 3.4 million cubic meters of concrete and 20,000 tons of reinforcing steel, twice as much plate and pipe steel, and 8,000 tons of structural steel.[96] Hundreds of these massive structures were built during the second half of the 20th century, and the world's largest dam—China's Sanxia (Three Gorges) on the Yangzi, generating electricity since 2011—has its almost 28 million cubic meters of concrete reinforced with 256,500 tons of steel.[97]

Annual American cement consumption rose tenfold between 1900 and 1928, when it reached 30 million tons, and the postwar construction boom—including the construction of the Interstate Highway System and the expansion of the country's airports—tripled by the century's end. The peak was reached at about 128 million tons in 2005, and recent rates are around 100 million tons a year.[98] This is now a tiny fraction of the annual demand in the world's number-one cement consumer, China. In 1980, at the outset of its modernization drive, it produced less than 80 million tons of cement. In 1985, it surpassed the US to become the world's largest producer, and in 2019 its output of about 2.2 billion tons was just over half of the global total.[99]

Perhaps the most stunning outcome of this rise is that in just two years—2018 and 2019—China produced nearly as much cement (about 4.4 billion tons) as did the United States during the entire 20th century (4.56 billion tons).

Not surprisingly, the country now has the world's most extensive systems of freeways, rapid trains, and airports, as well as the largest number of giant hydro stations and new multimillion-population cities. Yet another astounding statistic is that the world now consumes in one year more cement than it did during the entire first half of the 20th century. And (both fortunately and unfortunately) these enormous masses of modern concrete will not last as long as the Pantheon's coffered dome.

Ordinary construction concrete is not a highly durable material and it is subject to many environmental assaults.[100] Exposed surfaces are attacked by moisture, freezing, bacterial and algal growth (especially in the tropics), acid deposition, and vibration. Buried concrete structures suffer from crack-inducing pressures, and from damage caused by reactive compounds seeping from above. Concrete's high alkalinity (freshly poured material has a pH of about 12.5) is an effective guard against the corrosion of the reinforcing steel, but cracks and exfoliation expose the metal to corrosive disintegration. Chlorides attack concrete submerged in seawater and concrete on winter roads where salt is used for de-icing.

Between 1990 and 2020, the mass-scale concretization of the modern world has emplaced nearly 700 billion tons of hard but slowly crumbling material. The durability of concrete structures varies widely: while it is impossible to offer an average longevity figure, many will deteriorate badly after just two or three decades while others will do well for 60–100 years. This means that during the 21st century we will face unprecedented burdens of concrete deterioration, renewal, and removal (with, obviously, a particularly acute problem in China), as structures will have to be torn down—in order to be replaced or destroyed—or abandoned. Concrete structures can be slowly demolished, reinforcing steel can be separated, and both

materials can be recycled: not cheap, but perfectly possible. After crushing and sieving, the aggregate can be incorporated in new concrete, and reinforcing steel can be recycled.[101] Even now, replacement concrete and new concrete are needed everywhere.

In affluent countries with low population growth, the main need is to fix decaying infrastructures. The latest report card for the US awards nothing but poor to very poor grades to all sectors where concrete dominates, with dams, roads, and aviation getting Ds and the overall average grade just D+.[102] This appraisal gives an inkling of what China might face (mass- and money-wise) by 2050. In contrast, the poorest countries need essential infrastructures and the most basic need in many homes in Africa and Asia is to replace mud floors with concrete floors in order to improve overall hygiene and to reduce the incidence of parasitic diseases by nearly 80 percent.[103]

With aging populations, migration to cities, economic globalization, and widespread regional declines, more concrete will simply be abandoned worldwide. Concrete ruins of car factories in Detroit, abandoned enterprises in Europe's old industrial regions, and all those now derelict plants and monuments built by Soviet central planners on the Russian plain and in Siberia are only the first waves of this trend.[104] Other common and prominent concrete relics are thick-walled defensive bunkers such as those of Normandy and the Maginot Line, and massive concrete silos that formerly housed nuclear missiles and now sit empty on America's Great Plains.

Material outlook: old and new inputs

During the first half of the 21st century—with slower global population growth and with stagnant or even declining counts in many affluent countries—economies should have

no problems meeting the demand for steel, cement, ammonia, and plastics, especially with intensified recycling. But it is unlikely that by 2050 all of these industries will eliminate their dependence on fossil fuels and cease to be significant contributors to global CO_2 emissions. This is especially unlikely in today's low-income modernizing countries, whose enormous infrastructural and consumer needs will require large-scale increases of all basic materials.

Replicating the post-1990 Chinese experience in those countries would amount to a 15-fold increase of steel output, a more than 10-fold boost for cement production, a more than doubling of ammonia synthesis, and a more than 30-fold increase of plastic syntheses.[105] Obviously, even if other modernizing countries accomplish only half or even just a quarter of China's recent material advances, these countries would still see multiplications of their current uses. Requirements for fossil carbon have been—and for decades will continue to be—the price we pay for the multitude of benefits arising from our reliance on steel, cement, ammonia, and plastics. And as we continue to expand renewable energy conversions, we will require larger masses of old materials as well as unprecedented quantities of materials that were previously needed in only modest amounts.[106]

Two prominent examples illustrate this unfolding material dependence. No structures are more obvious symbols of "green" electricity generation than large wind turbines—but these enormous accumulations of steel, cement, and plastics are also embodiments of fossil fuels.[107] Their foundations are reinforced concrete, their towers, nacelles, and rotors are steel (altogether nearly 200 tons of it for every megawatt of installed generating capacity), and their massive blades are energy-intensive—and difficult to recycle—plastic resins (about 15 tons of

them for a midsize turbine). All of these giant parts must be brought to the installation sites by outsized trucks and erected by large steel cranes, and turbine gearboxes must be repeatedly lubricated with oil. Multiplying these requirements by the millions of turbines that would be needed to eliminate electricity generated from fossil fuels shows how misleading any talks are about the coming dematerialization of green economies.

Electric cars provide perhaps the best example of new, and enormous, material dependencies. A typical lithium car battery weighing about 450 kilograms contains about 11 kilograms of lithium, nearly 14 kilograms of cobalt, 27 kilograms of nickel, more than 40 kilograms of copper, and 50 kilograms of graphite—as well as about 181 kilograms of steel, aluminum, and plastics. Supplying these materials for a single vehicle requires processing about 40 tons of ores, and given the low concentration of many elements in their ores it necessitates extracting and processing about 225 tons of raw materials.[108] Again, we would have to multiply this by close to 100 million units, which is the annual worldwide production of internal-combustion vehicles that would have to be replaced by electric drive.

Uncertainties about the future rates of electric vehicle adoption are large, but a detailed assessment of material needs, based on two scenarios (assuming that 25 percent or 50 percent of the global fleet in 2050 would be electric vehicles), found the following: from 2020 to 2050 demand for lithium would grow by factors of 18–20, for cobalt by 17–19, for nickel by 28–31, and factors of 15–20 would apply for most other materials from 2020.[109] Obviously, this would require not only a drastic expansion of lithium, cobalt (a large share of it now coming from Congo's perilously hand-dug deep shafts and from widespread child labor), and nickel extraction and processing, but also an extensive search for new resources. And these, in turn,

could not take place without large additional conversions of fossil fuels and electricity. Generating smoothly rising forecasts of future electric vehicle ownership is one thing; creating these new material supplies on a mass global scale is quite another.

Modern economies will always be tied to massive material flows, whether those of ammonia-based fertilizers to feed the still-growing global population; plastics, steel, and cement needed for new tools, machines, structures, and infrastructures; or new inputs required to produce solar cells, wind turbines, electric cars, and storage batteries. And until all energies used to extract and process these materials come from renewable conversions, modern civilization will remain fundamentally dependent on the fossil fuels used in the production of these indispensable materials. No AI, no apps, and no electronic messages will change that.

4. Understanding Globalization

Engines, Microchips, and Beyond

Globalization manifests itself in countless quotidian ways. Ships loaded with many thousands of interlocking steel containers are bringing electronic and kitchen gadgets, socks and pants, garden tools and sports equipment from Asia to the shopping centers of Europe and North America, as well as to hawkers of cheap clothes and kitchenware in Africa and Latin America. Giant tankers move crude oil from Saudi Arabia to refineries in India and Japan, and liquefied natural gas from Texas to storage tanks in France and South Korea. Large bulk carriers full of iron ore leave Brazil for China and return empty (as do the oil tankers) to their home ports. Apple's American-designed iPhones are assembled in a Taiwanese-owned factory (Hon Hai Precision, trading as Foxconn) in Shenzhen, in China's Guangdong province, from parts coming from more than a dozen countries, and the phones are then distributed globally in a highly choreographed feat of integrated engineering and marketing.[1]

International migrations include families from Punjab or Lebanon arriving in Toronto and Sydney on scheduled jet flights; migrants risking their lives in rubber dinghies as they try to reach Lampedusa or Malta; and young adults seeking higher education abroad in London, Paris, or in small colleges in Iowa and Kansas.[2] Travel for leisure has reached such levels that in many cases the pre-pandemic label of "overtourism" was but a mild description of what was taking place in Rome's San Pietro, where the basilica

was jammed with selfie stick–wielding tourists on quick package European tours, or on Asian beaches that became so degraded they had to be closed to visitors.[3] The COVID-19 pandemic's onset led to new acute overtourism crises, as hundreds of elderly people were shut in on cruise ships off the shores of Japan or Madagascar in the early spring of 2020—and yet before the end of the year, even as new waves of infection were rising fast around the world, major companies advertised new megaship cruises for 2021 (such is modern restlessness!).

Statistics concerning money movements greatly underestimate the real (including massive illegal) flows. The global merchandise trade is now close to $20 trillion a year, and the annual value of world trade in commercial services is close to $6 trillion.[4] Global foreign direct investment doubled between 2000 and 2019 and now approaches $1.5 trillion a year, while by 2020 global currency trading totaled nearly $7 trillion per day.[5] And numbers describing global information flows are many orders of magnitude higher than these money transfers—not just in terabytes or petabytes but in exa (10^{18}) and yotta (10^{24}) bytes of data.[6]

Obviously, understanding how the modern world really works cannot be done without appreciating the evolution, the extent, and the consequences of this multifaceted process which entails (according to what I think is perhaps the best concise definition) "the growing interdependence of the world's economies, cultures, and populations, brought about by cross-border trade in goods and services, technology, and flows of investment, people, and information."[7] Contrary to widely held beliefs, the process is not new; moving jobs to countries with low labor costs (labor arbitrage) is just one of its several requisite drivers; and there is nothing inevitable about its future expansion and intensification. Perhaps the greatest misconception

about globalization is that it is a historical inevitability preordained by economic and social evolution. Not so—globalization is not, as a former US president claimed, “the economic equivalent of a force of nature, like wind or water”; it is just another human construct, and there is now a growing consensus that, in some ways, it has already gone too far and needs to be readjusted.[8]

In this chapter I will show that globalization is a process with considerable history (although, in the past, the rising flows of goods, investment, and people were not subsumed under the label), and the recent attention to the phenomenon escalated due to its extent, not because of its novelty. Google’s Ngram Viewer charts provide excellent illustrations of long-term trends of attention paid to any notable developments. The chart for globalization consists of a near-zero flat line until the mid-1980s, then a steep rise of interest during the next two decades—a 40-fold rise of frequency between 1987 and 2006, when interest peaked—followed by a 33 percent decline by 2018.

If low labor costs were the sole reason for locating new factories abroad—as many people seem to erroneously believe—then sub-Saharan Africa would be the most obvious choice, and India would almost always be preferable to China. But during the second decade of the 21st century, China averaged about $230 billion of foreign direct investment a year, compared to less than $50 billion for India and just around $40 billion for all of sub-Saharan Africa (excluding South Africa).[9] China provided a combination of other attractors—above all, centralized one-party government that could guarantee political stability and acceptable investment conditions; a large, highly homogeneous and literate population; and an enormous domestic market—that made it the preferred choice over Nigeria, Bangladesh, and even India, resulting in a remarkable collusion between the world’s largest

communist state and a nearly complete lineup of the world's leading capitalist enterprises.[10]

Globalization has been linked, approvingly, with the advantages, benefits, creative destruction, modernity, and progress it has brought to entire nations. China has been by far its greatest beneficiary, as the country's reintegration into the global economy helped to reduce the number of people living in extreme poverty by 94 percent between 1980 and 2015.[11] But these gains and praises coexist with various degrees of disapproval or even outright rejection of the process, with the discontent and anger that have resulted from the loss of well-paying jobs to offshoring (with post-2000 losses especially prominent in several sectors of the US economy), from the race to the bottom as labor arbitrage drives remunerations ever lower, and from growing inequality and new kinds of immiseration.[12]

While there is much with which to agree, and disagree, in these reactions and analyses, this chapter will be neither a reiteration of often-told narratives that have crowded economic publications of the past two generations, nor a polemic about the desirability of the phenomenon. My goal is to explain how technical factors—above all, new prime movers (engines, turbines, motors) and new means of communication and information (storage, transmission, and retrieval)—made successive waves of globalization possible, and then to point out how these technical advances have been contingent on the prevailing political and social conditions. As a result, there is nothing inevitable about the continuation and further intensification of the process, and the significant, decades-long, post-1913 retreat from globalization, as well as recent reversals and concerns about the security of existing supply chains, serve as obvious reminders of this reality.

Globalization's distant origins

In its most fundamental physical way, globalization is, and will remain, simply the movement of mass—of raw materials, foodstuffs, finished products, and people—and the transmission of information (warnings, guidance, news, data, ideas) and investment within and among the continents, enabled by techniques that make such transfers possible on large scales and in affordable and reliable ways. Inevitably, these transfers entail energy conversions, and while moving mass and transmitting information can be done by deploying human and animal muscles (carrying loads, sending messengers on horseback), these animate prime movers have very limited power, endurance, and range—and, of course, they are incapable of bridging the oceans.

Sails, going back to the Egypt of more than 5,000 years ago, were the first inanimate energy converters to make such links possible, but only steam engines, aided by better means of navigation, brought the large-scale, low-cost, and reliable interchange—and only with the post-1900 diffusion of internal combustion engines (on land, on the ocean, and in the air) and the post-1955 adoption of solid-state (semiconductor) electronics has this process increased to unprecedented levels. But these innovations intensified globalization; they didn't launch it. The process (unlike its post-1985 prominence) is not a new phenomenon, and in this chapter I will trace both the timing and the extent of its past waves—and the limits of their eventual reach and intensity.

The process began a long time ago, but its first rounds were inherently limited. Trading obsidian along prehistoric routes in parts of the Old World more than 6,000 years ago is not, as has recently been claimed, an example of globalization[13] —but many ties before the European

“discovery” of America were relatively intensive and truly intercontinental. Ships sailed regularly from Berenike, the Red Sea port in Roman Egypt, to India, as they did from Basra: Cassius Dio wrote in 116 CE how the emperor Trajan, during his temporary occupation of Mesopotamia, stood at the Persian Gulf’s shore watching a ship leaving for India and wishing that he were as young as Alexander, who had led his armies to that faraway country.[14] Chinese silk made it, via the Parthian Empire, all the way to Rome—as did regular shipments of grain and extraordinarily heavy loads of ancient obelisks from Egypt, and wild animals from Mauretania Tingitana (northern Morocco).[15]

But the scattered linking of parts of Europe, Asia, and Africa is a far cry from a truly global reach. Only the inclusion of the New World (starting in 1492) and the first circumnavigation of the Earth (1519) began to satisfy this definition, and a mere century later commercial exchanges tied European states with the interior of Asia, India, and the Far East, as well as with coastal regions of Africa and with both Americas—and only Australia was still left aside. Some of these early links were as enduring as they were transformative. The East India Company, headquartered in London and operating between 1600 and 1874, traded a wide range of items—largely to and from the Indian subcontinent—ranging from textiles and metals to spices and opium. The Vereenigde Oost-Indische Compagnie (Dutch East India Company) imported spices, textiles, gems, and coffee mostly from Southeast Asia; it kept its uninterrupted monopoly on trade with Japan for two centuries (between 1641 and 1858), and the Dutch domination of the East Indies ended only in 1945.[16]

At the same time, technical capabilities put clear limits on the frequency and intensity of these early exchanges, and here I will use their key markers—the maximum power and speed of individual modes of transport, and the ability

to communicate over long distances ever more quickly and reliably—to trace the four distinct eras of globalization.

Incipient globalization eventually connected the world with far-flung but not very intensive exchanges enabled by sail ships. Steam engines made these linkages more common, more intensive, and much more predictable, while telegraph provided the first truly global means of (near-instant) communication. The combination of the first diesel engines, flight, and radio elevated and accelerated these enablers of globalization. And large diesels (in shipping), turbines (in flight), containers (enabling intermodal transport), and microchips (allowing unprecedented controls thanks to the volume and speed of information-handling) brought globalization to its highest stage.

Wind-driven globalization

Starting at the beginning, the limits of globalization dependent solely on animate power are easily stated. Human and animal muscles were the only prime movers on land, restricting the weight of goods that could be carried by porters (maxima of 40–50 kilograms) or by animal caravans (horses or camels, loads of 100–150 kilograms per animal) and limiting their daily progress.[17] Caravans on the Silk Road (from Tanais on the Black Sea via Sarai to Beijing) took a year, implying an average speed of about 25 kilometers per day. Wooden sail ships undertaking long-distance voyages were far from numerous, and they had small capacities, traveled slowly, lacked accurate means of navigation, and frequently failed to complete their journeys.

Detailed records of Dutch shipping to Asia document these limits.[18] They show that the average duration of a voyage to Batavia (present-day Jakarta) was 238 days (eight months) during the 17th century, and another month

from Batavia to Dejima, the small Dutch outpost in the Nagasaki harbor. And average speeds during the 18th century were slightly slower, with journeys taking 245 days. Given the distance of 15,000 nautical miles (27,780 kilometers) between Amsterdam and Batavia, this implies an average speed of 4.7 kilometers per hour, the equivalent of rather slow walking! That poor average is a result of some half-decent speeds when running before the wind (the wind coming from directly behind the vessel), and other days when ships were becalmed by the equatorial doldrums or when long spells of strong prevailing winds required laborious tacking—or giving up and waiting for the wind to shift.

During the 17th and 18th centuries the Dutch built only 1,450 new ships for Asian trade (averaging seven a year) with capacities of just 700–1,000 tons. That was good enough to make a profit carrying such high-value cargoes as spices, tea, and china, but completely uneconomical for any trade in bulk commodities (valuable Japanese copper was the major exception). And while the sailings to Batavia were limited by the availability of ships and the risks of travel, sailings to Japan were restricted by the Tokugawa shoguns to no more than 2–7 ships a year and to just one arrival a year during the 1790s. And because the Dutch East India Company kept detailed records, we also know the number of people who boarded the more than 4,700 ships bound from the Netherlands to the East Indies: nearly 1 million people made this journey between 1595 and 1795, but that is just 5,000 a year, and about 15 percent of them died before reaching Ceylon or Batavia.[19]

Even so, during the second century of the early modern era (1500–1800) the societies at the forefront of this still-modest but rising wave of globalization were influenced by these long-range interchanges.[20] Not surprisingly, given their newly acquired riches and contact with other

continents, the lives of urban elites during the Dutch Republic's Golden Age (1608–1672) offer perhaps the best examples of these new benefits. Their growing range of possessions and experiences were the obvious markers of the gains derived from trade and from material and cultural exchanges, and many famous painters provide a fascinating record of this incipient affluence.

Works by Dirck Hals, Gerard ter Borch, Frans van Mieris, Jan Vermeer van Delft, and many lesser masters show these new profits turned into tiled floors, glass windows, well-made furniture, thick tablecloths, and musical instruments.[21] Some have argued that this can all be dismissed because this genre of painting depicted a fantasy world that never existed in reality.[22] Exaggeration and stylization were certainly present, but, as historian Jan de Vries makes clear, what he calls the "New Luxury" (generated by urban society) was real: not striving for grandeur and excess, but evinced in products of good craftsmanship—from furniture to tapestries, from Delft tiles to silver utensils—including about 3 million paintings owned by families in Holland in the 1660s.[23]

And there were other, more direct, proofs of reaching out and bringing in: the presence of Africans in Amsterdam, the popularity of maps, the profitable business of compiling and publishing atlases, the consumption of sugar and exotic fruits, the import of spices (the Dutch colonization of the East Indies began in 1607 by taking over Ternate, the largest producer of cloves, followed shortly afterwards by occupying the nutmeg-growing Banda Islands), and the drinking of tea and coffee.[24]

But these early exchanges had limited economic impact, as they never reached beyond the small segments of people who benefited from the new ventures. The countryside was left with its traditional ways. This was just an incipient, selective, and limited globalization without any substantial

nationwide impacts, to say nothing about truly global consequences. For example, economist Angus Maddison estimated that in 1698–1700 commodity exports from the East Indies accounted for just 1.8 percent of the Dutch net domestic product, and that the Indonesian export surplus was a mere 1.1 percent of the Dutch GDP—and nearly a century later (1778–1780) both of these shares were still only 1.7 percent.[25]

Steam engines and telegraph

The first quantitative leap in the process of globalization came only with the combination of more reliable navigation, steam power (resulting in larger ship capacities and faster speeds), and the telegraph—the first means of (nearly) instant long-distance communication. Navigation came first, in 1765, with John Harrison's fourth highly accurate sea clock, a chronometer which made it possible to determine exact longitude. But the leap in speeds and capacities had to wait until steam engines displaced sails in intercontinental shipping, when screws made paddlewheels obsolete, and when steel-hulled ships became dominant.[26]

The first steam-powered westward transatlantic crossings took place in 1838, but sailing ships remained competitive for another four decades. With wind as the prime mover, the cost of carrying a unit of cargo per unit of distance by a sailing ship was largely independent of the length of the voyage; while the longer the steamship voyage, the more of the vessel's deadweight capacity had to be loaded with coal to fuel relatively inefficient engines, leaving less room for cargo. Refueling stations reduced, but did not eliminate, this disadvantage.[27]

This long coexistence of sail and steam is well documented by the German transition: by 1873, sailing ships had lost the competition on the intra-European

routes, while on the intercontinental routes sails had the advantage until 1880 but lost it rapidly afterwards with the adoption of more efficient engines.[28]

All pioneering steamships crossing the Atlantic were propelled by paddlewheels, but screw propulsion was commercially introduced during the 1840s; and in 1877 Lloyd's Register of Shipping approved steel as an insurable construction material just as new production methods made the metal abundant and affordable (see chapter 3). Steel hulls and screws and large steam engines made it possible to cover reliably 30 and then 40 km/hour compared to the average of 20 km/hour for the fastest clippers of the 1850s, and long-distance shipping also gained new markets with the exports of live cattle and—starting in the 1870s—chilled meat (carried almost exclusively by passenger liners) and butter from the US, Australia, and New Zealand.[29]

Practical telegraph was developed during the late 1830s and the early 1840s; the first (short-lived) transatlantic link cable was laid in 1858; and by the century's end undersea cables had connected all continents.[30] For the first time in history, trading could take into consideration the knowledge of demand and prices in different parts of the world—and the availability of a new powerful prime mover could translate this information into profitable international exchanges: when the price of Iowa beef was cheaper than British beef of inferior quality and new refrigerating techniques became available, for example, the exports of frozen American meat rose rapidly—more than quadrupling between the late 1870s and the late 1900s.

During this wave of steam-driven globalization, the role of the telephone—a device far superior to telegraph for direct personal communication—remained limited.[31] Its patenting and the first public demonstration in 1876 were followed by a slow diffusion of service mediated by manual

exchanges. US telephone ownership rose from less than 50,000 in 1880 to 1.35 million by 1900 (one phone for every 56 Americans); calling distances expanded gradually (a call from New York to Chicago could be made only in 1892); the first transcontinental calls to San Francisco (via multiple exchanges) came in 1915; and a three-minute conversation cost about $20, or more than $500 in 2020 monies. The first intercontinental call—from the US to the UK—came only in 1927, and even the monopolized domestic service remained relatively expensive for the next two generations.[32]

But the advances in intercontinental shipping, combined with rapid post-1840 construction of railroads—across Europe and North America, as well as in India, other regions of Asia, and Latin America—created the first wave of a truly large-scale globalization. The total volume of global trade quadrupled between 1870 and 1913; the share of trade (exports and imports) in the worldwide economic product rose from about 5 percent in 1850 to 9 percent by 1870, and to 14 percent in 1913; and the best estimates for 13 countries (including Australia, Canada, France, Japan, Mexico, and the UK) show their combined share rising from 30 percent in 1870 to 50 percent just before the First World War.[33]

Large steam liners were also able to move passengers on an unprecedented scale. During the sailing era, packet ships carried 250–700 steerage passengers; by the first decade of the 20th century, a steam liner might carry more than 2,000 passengers.[34] Leisure travel, a form of temporary migration formerly reserved for the privileged classes, took off in its many manifestations with steam-powered trains and ships. With Thomas Cook leading the way in 1841, travel agencies offered package tours, and spa and seaside vacations became fashionable as people

visited Baden-Baden, Karlsbad, and Vichy, and traveled to Trouville on the French Atlantic coast or to Capri.

Some of these trips were transcontinental: affluent Russian families took trains all the way from Moscow and Saint Petersburg to the French Riviera. Some travelers sought physical challenges (newly fashionable Alpine mountaineering), while others went on (more affordable) religious pilgrimages.[35] And this new mobility also had a distinctly political dimension, with exiles—traveling by trains and ships—seeking refuge in foreign countries: most famously, nearly all future prominent Bolshevik leaders (Lenin, Leon Trotsky, Nikolai Bukharin, Grigory Zinoviev) spent many years abroad in Europe and the US.[36]

And I think it is quite reasonable to argue that steam globalization also helped to create a new kind of literary sensibility, with Joseph Conrad (Józef Korzeniowski) as its master. The protagonists of his three greatest novels find themselves far from their homes thanks to the era's mass trade and travel (Nostromo in South America, Jim in Asia, Marlow in Africa), and their lives and misfortunes were linked to steamships: Nostromo, in the eponymous novella, is known as Capataz de Cargadores (Head Longshoreman); Jim's life takes a tragic turn while he is helping transport Muslim pilgrims from Asia to Mecca in *Lord Jim*; and Marlow's transformation could not have taken place without Western goods being brought deep into the Congo basin in *Heart of Darkness*.

The first diesel engines, flight, and radio

The next fundamental advance in prime movers that raised the capability of long-distance shipping was the replacement of steam engines with diesel engines—machines of superior efficiency and reliable performance.[37] Two concurrent processes that promoted

further globalization were the invention of airplanes powered by reciprocating gasoline engines, and radio communication. The first brief flights—by the Wright brothers—took place in late 1903; hundreds of planes flew in combat during the First World War; and the first airline company, the Dutch KLM, was set up in 1921.[38] The first transatlantic radio signal arrived in December 1901; the French army deployed the first portable transmitters for air-to-ground communication in 1916; and the first commercial radio stations began to broadcast in the early 1920s.[39]

Rudolf Diesel deliberately set out to design a new, more efficient, prime mover, and by 1897 his first (heavy and stationary) engine had reached an efficiency of 30 percent, double the performance of the best steam engines.[40] But the first marine engine was installed only in 1912 on *Christian X*, a Danish freighter. Diesel-powered ships carried much less fuel than coal-fired steamers, but could travel further without refueling because the new engines were nearly twice as efficient—and because, per unit of mass, diesel oil contains nearly twice as much energy. An American engineer who saw the first diesel-powered vessel after her maiden voyage to New York in 1912 concluded that: “marine history is being written by the advent of the Diesel engine.”[41]

By the 1930s, when diesel engines conquered the shipping market, the rapidly maturing aviation industry began to deliver the first airplanes capable of flying profitably over long distances. In 1936 came the first deliveries of the Douglas DC-3, a twin-engine aircraft capable of carrying up to 32 passengers just a bit faster than the landing speed of modern jetliners.[42] Three years later came the Boeing 314 Clipper, a long-range flying boat with an impressive range of 5,633 kilometers—still not enough to cross the Pacific, but more than enough to reach

Honolulu from San Francisco before continuing to Midway, Wake, Guam, and Manila to reach Asia.

The Clipper had no shortage of physical comforts for its 74 passengers—including a stateroom and a dining room, dressing rooms, and seats that converted into bunks—but there was no way to eliminate the noise and vibration of reciprocating engines, and the highest cruising altitude (5.9 kilometers) was still too low to put it above the most turbulent atmospheric layers. With three stops it took 15½ hours from New York to Los Angeles, and the first London to Singapore link in 1934 took eight days with 22 layovers, including Athens, Cairo, Baghdad, Basra, Sharjah, Jodhpur, Calcutta, and Rangoon.[43] But long as it was, it was a considerable improvement on the approximately 30 days needed to travel by ship from Southampton via the Suez Canal.

Radio was of critical importance for better sea and air navigation, and, compared to the telegraph, it was also a superior tool for mass-scale dissemination of instant information. Radio communication was deployed first on transatlantic ocean liners: thanks to *Titanic*'s distress message—"CQD Titanic 41.44 N 50.24 W," sent at 12:15 a.m. on April 15, 1912—700 people in lifeboats were saved by *Carpathia*.[44] Radio navigation made great advances during the 1930s with the introduction of range stations: planes on course to an airport heard a continuous audio tone; those drifting off-course heard N Morse code (– •) when to the left of the path, A (• –) when right of it.[45]

Wireless broadcasts required no expensive undersea cables, and they could achieve wide area coverage and universal access (anybody with a simple receiver could listen). Not surprisingly, the adoption of radio receivers was rapid: within a decade after their introduction, 60 percent of American families had them—nearly as fast a rate of acquisition as that of black-and-white TVs (which also

originated in the 1920s) after the Second World War, and a faster rate than the subsequent diffusion of color TV which in the US took off rapidly during the early 1960s.[46]

Marine diesels and reciprocating aircraft engines remained the technical enablers of globalization during the two interwar decades, and their mass-scale deployment made the decisive contribution to the outcome of the Second World War. By the conflict's end, the US had built nearly 296,000 airplanes compared to about 112,000 in Germany and 68,000 in Japan.[47] In 1945, the United States emerged as the world's dominant power, and the economic recovery of Western Europe was fast. Aided by the US investment (1948's Marshall Plan), all of the region's countries surpassed their prewar (1934–1938) level of industrial production by 1949, while Japan's recovery was accelerated by the contribution of that country's industries to the Korean War.[48]

The stage was thus set for a period of unprecedented growth and integration, as well as for extensive social and cultural interactions. Communist economies, led by the USSR and China, were the notable exceptions: although they reported impressive economic growth rates, they were highly autarkic and operated with very little foreign trade beyond their bloc (and kept their citizens from traveling abroad).

Large diesels, turbines, containers, and microchips

This distinct and intensive, but still far from universal, spell of post-1950 globalization—which ended in 1973–1974 with OPEC's two rounds of oil price increases and which was followed by 15 years of relative stagnation—was enabled by a combination of four fundamental technical advances. These were the rapid adoption of much more powerful and efficient designs of diesel engines; the introduction (and

even faster diffusion) of a new prime mover, the gas turbine used for the propulsion of jetliners; superior designs for intercontinental shipping (massive bulk carriers for liquids and solids, and the containerization of other cargoes); and quantum leaps in computing and information processing.

These advances took off with the first electronic computers—which used unreliable and bulky vacuum tubes and were built during, and right after, the Second World War—and their progress was revolutionized by the patenting (1947–1949) and commercialization (starting in 1954) of the first transistors, devices that remain the foundation of modern solid-state electronics. The next step (late 1950s–early 1960s) was placing increasing numbers of transistors on a microchip to create integrated circuits, and in 1971 Intel released its 4004, the world's first microprocessor. It contained 2,300 transistors, forming a complete general-purpose central processing unit suitable for many programmable applications.

And despite the recent perceptions of the transformative nature of technical capabilities deployed since the beginning of the 21st century (above all, advances in artificial intelligence and synthetic biology), our world is still beholden to these critical pre-1973 achievements. Moreover, as there are no immediately available alternatives that could be deployed for the same tasks on similarly massive scales, we will depend on these techniques—be they giant marine diesel engines, container ships and wide-body jetliners, or microprocessors—for decades to come. And that is also why these techniques deserve a closer look.

The scale of global economic expansion between 1950 and 1973 is best illustrated by the growing output of the four material pillars of modern civilization (for their assessment, see chapter 3) and by the world's rising energy demand (see chapter 1).[49] Steel production nearly

quadrupled (from about 190 to 698 megatons per year), cement production increased almost sixfold (from 133 to 770 megatons), ammonia synthesis almost eightfold (from less than 5 to 37 megatons of nitrogen), and plastic output was more than 26 times higher (from less than 2 to 45 megatons). Primary energy output nearly tripled, and crude oil consumption rose almost sixfold as the world became increasingly dependent on Middle Eastern oil. As a result, there is no contest as to which technique has made the greatest difference in enabling mass-scale transport in the global economy: without diesel engines, intercontinental trade in bulk cargoes—from grain to crude oil—would have been just a small fraction of recent shipments.

After the Second World War, crude oil tankers were the first vessels to grow in capacity as the rapid economic growth of Western Europe and Japan coincided with the availability of newly discovered Middle Eastern giant oil fields (Saudi Arabia's Ghawar, the world's largest, was found in 1948 and began flowing in 1951), and exports of this inexpensive fuel (until 1971 it sold for less than $2 per barrel) required vessels of increasing capacities. Typical pre-1950 oil tankers had capacity of only 16,000 deadweight tons (mostly the ship's cargo, but also its fuel, ballast, provision, and crew). The first tanker of more than 50,000 deadweight tons was launched in 1956, and by the mid-1960s Japanese shipyards began launching very large crude carriers (VLCC) with capacities of between 180,000 and 320,000 deadweight tons. Beyond that came ultra large crude carriers (ULCC) and seven ships larger than 500,000 deadweight tons were launched during the 1970s, too large to allow for flexible routing as they can be accommodated only at the deepest ports.[50] This growing fleet made it possible to increase the shipments of Middle Eastern oil from less than 50 megatons in 1950 to about 850 megatons by 1972.[51]

Even as crude oil exports were soaring during the late 1950s and early 1960s, there was no way to ship natural gas, a cleaner fuel than coal or refined oil fuels and also well suited both to industrial and household uses and to the highly efficient generation of electricity. Intercontinental natural gas shipments became possible with the introduction of the first liquefied natural gas (LNG) tankers (carrying the fuel at −162ºC in insulated containers), which brought exports from Algeria to the UK starting in 1964 and from Alaska to Japan in 1969.[52] But for decades, the ships were of low capacity and the market was limited to long-term contracts with a small number of buyers.

Growing intercontinental trade required new modes of specialized shipping. Bulk carriers with large compartments and massive watertight hatches were designed to transport coal, grain, ores, cement, and fertilizer, and they could be rapidly loaded and unloaded. But the greatest shipping innovation came in 1957, when a North Carolina trucker Malcolm McLean finally transformed his pre–Second World War idea—carrying cargo in uniformly-sized steel boxes, which are easy to load by large port cranes and can be off-loaded directly onto waiting trucks or trains or stacked temporarily for later distribution—into a commercial reality.

In October 1957, *Gateway City*, a freighter whose hold was fitted with cellular compartments to accommodate 226 stacked containers, became the world's first true container ship, and McLean's Sea-Land company began a regular container service to Europe (Newark–Rotterdam) in April 1966 and to Japan in 1968.[53] New ships were also needed for expanding intercontinental car exports. The American market opened up first to Volkswagen's Beetle (the first car imported already in 1949) and then to small Japanese designs (the Toyopet since 1958, Honda N600 since 1969, and Honda Civic since 1973), and new roll-on/roll-off

vessels (mostly with built-in retractable loading ramps) were designed to meet those needs. After years of slow adoption, VW's sales peaked at 570,000 units in 1970, and Japanese designs continued to gain US market share over the coming decades.[54]

Fortunately, there was no problem meeting the propulsion needs of these new large ships. The pre–Second World War sizes of the largest diesel engine had more than doubled by the late 1950s—to more than 10 megawatts—as their efficiencies approached 50 percent.[55] Subsequently, the maximum power of these massive multi-cylinder engines rose to 35 megawatts by the late 1960s and to more than 40 megawatts by 1973. Any diesel engines rated above 30 megawatts can power the largest ULCC, and hence the size of these vessels has never been limited by the availability of adequate prime movers.

The quest for a practical gas turbine, a radically new prime mover in which fuel is sprayed into a stream of compressed air in order to generate a high-temperature gas that expands and exits the machine at high speed, resulted in the first stationary turbine (for electricity generation) in 1938, just as the first practical designs for jet engines emerged—independently and at nearly the same time—in prewar England and Germany.[56] Frank Whittle and Hans von Ohain were the first engineers to test turbines that were sufficiently efficient and reliable to power military airplanes. Small numbers of these jets were used in combat in late 1944, too late to have any effect on the predetermined course of the war, but after its end the British industry pressed its advantage and in 1949 the Comet became the world's first commercial jetliner, powered by four de Havilland Ghost turbojet engines.[57]

Unfortunately, by 1954 a series of fatal accidents (not related to the engines) forced the withdrawal of the plane from service, and when a redesigned Comet returned in

1958 it was quickly overshadowed by Boeing's 707, the first design of a still-expanding family of jetliners.[58] The second in line was the tri-engine Boeing 727, and in 1967 came the Boeing 737, the smallest plane of the series. In 1966 William Allen, the company's chairman, took a bold decision—investing more than twice the company's worth, and hence essentially betting its future on the success of the project—to develop the first wide-body jetliner.

Supersonic jets were expected to take over intercontinental routes—the development of the British-French Concorde began in 1964—but supersonic flight remained restricted to the expensive and noisy Concorde and it was Boeing's 747 that became the most revolutionary plane design in history.[59] The plane was actually conceived as a freighter: its wide body allowed the placing of two standard ship containers side by side, and the cockpit in the top bubble made it possible to turn up the nose for front-loading. The prototype took off less than three years after Pan Am's order for 25 of the 747s, and the first commercial flight left New York for London on January 21, 1970.

The plane's size (a maximum takeoff weight of 333 tons) was made possible by deploying four Pratt & Whitney turbofan engines.[60] Unlike turbojet engines, where all compressed air moves through the combustion chamber, in turbofans larger masses of less compressed and hence slower-moving air bypass the combustor and help to generate higher thrust during takeoff (and do so with less noise). Engines on 707s had a bypass ratio of 1:1, on the 747 it was 4.8:1, with nearly five times as much air bypassing the turbine.

Total deliveries of the 747 have added up to 1,548 planes in half a century of production, and Boeing estimates that during those five decades the planes carried 5.9 billion people, the equivalent of about 75 percent of the world's

population.[61] The plane's revolutionary design changed intercontinental travel, as wide-body jets have transported hundreds of millions of people to a growing number of destinations with steadily declining costs and increasing safety.

The integration of the global economy has been closely tied to the introduction of wide-body jetliners—to the Boeing 747 and to its later Airbus (A340 and A380) emulators. Their services have been particularly important for Asian exporters, who use them to deliver on short notice many highly sought-after or seasonal items (the latest mobile phone brands, Christmas gifts) to North American and European markets. And wide-body airplanes enabled mass-scale tourism to previously rarely visited destinations (runways long enough to accommodate 747s are in Bali and Tenerife, Nairobi and Tahiti), intercontinental immigration trips, and educational exchanges.

Of course, the advances of globalization were closely tied not only to the rising capacities and better performance of powerful prime movers but also to the relentless miniaturization of components needed for computing, information processing, and communication. The development of radio, and later of television and the first electronic computers, depended on deploying a variety of vacuum tubes, beginning with diodes and triodes during the first decade of the 20th century. Four decades later our reliance on these large assemblies of hot glass became a limiting factor for the development of electronic computing.

ENIAC, the first electronic general-purpose digital computer, had 17,648 vacuum tubes, a volume of about 80 cubic meters (the footprint of roughly two badminton courts), with its power supply and cooling system it weighed about 30 tons, and its frequent operating interruptions were caused by recurrent failures of tubes

that required near-constant maintenance and replacement.[62] The first practical transistors—solid-state devices performing the same functions as glass-enclosed devices—became commercially available during the early 1950s, and before the decade's end the ideas of several American inventors (Robert Noyce, Jack Kilby, Jean Hoerni, Kurt Lehovec, and Mohamed Atalla) resulted in the production of the first integrated circuits, with active (transistors) and passive (capacitors, resistors) components built and interconnected on a thin layer of silicon (a semiconducting material). These circuits can perform any specified computing functions, and their first practical uses were in rockets and space exploration.[63]

The next critical step was taken by Intel in 1969 when it began to design the world's first microprocessor, emplacing more than 2,000 transistors on a single silicon wafer in order to perform a complete set of prescribed functions: in the case of Intel's pioneering 4044, it was to run a small Japanese electronic calculator.[64] The 4044 founded Intel's decades-long prominence in microchip design that led to the first personal computers (the relatively expensive, slow and heavy desktops of the late 1970s and early 1980s) and portable electronics ranging from mobile phones (the first costly designs of the late 1980s) to laptops, tablets, and smartphones.

The years between 1950 and 1973 were marked by rapid economic growth in virtually every part of the world: its global annual mean rate and its average per capita gains were nearly 2.5 times greater than during the previous globalization wave of 1850–1913, and the value of exported goods in the world economic product rose from a low of just over 4 percent in 1945 to 9.6 percent in 1950 and about 14 percent in 1974, equaling the 1913 share but with trade volume nearly ten times higher.[65] Economic growth was nearly universal (China's Great Famine years of 1958–

1961 were the most consequential exception) but the benefits of this golden age of economic expansion—the postwar rebound, with high rates of growth helping to decrease economic inequality—were disproportionately concentrated in the West: by 1973, North America and the countries of Western Europe accounted for more than 60 percent of global exports.[66] As the major Western European economies (Germany, UK, France) and Japan became the era's most dynamic traders, inevitably America's share in world trade gradually eroded.

While trade was expanding and consumers in Western countries enjoyed greater access to a wider variety of imports, international travel—be it for business or leisure—remained relatively limited, as did international migration and the numbers of people studying or temporarily working abroad. Germans did not fly to Thailand or Hawaii; they drove to Italian beaches. The share of immigrants in the US population, which peaked at nearly 15 percent just before the First World War, reached a new low of less than 5 percent in 1970.[67] And the suggestion that China, cut off from the world by Mao-inspired convulsions, would send masses of students to American universities would have been seen as nothing but an improbable fiction.

And then (for reasons explained in the first chapter, where I traced modern civilization's dependence on crude oil) it seemed that the postwar spell of limited but intensive globalization was over. OPEC-driven oil price increases caused globalization to falter, weaken, and recede, but this retreat did not affect all economic sectors—and in a matter of years a combination of effective adjustments laid foundations for a new round of globalization that, thanks to new political alignments, progressed further than any of the preceding waves.

Enter China, Russia, India

This time the expansion—enabled, as always, by technical factors—went so far because, for the first time in modern history, it could go that far. By the late 1960s, technical capabilities were ready for unprecedented global integration: energy supply was plentiful, there was no shortage of money to invest, and all that was needed was to extend the globalization process to the nations that did not participate in the first postwar round. This began, finally, when the technical and financial means became decisively augmented and potentiated by fundamental political reversals, as China, Russia, and India became major participants in global trade, finances, travel, and talent flows.

The gradual opening of China began in 1972 with Richard Nixon's visit to Beijing, took a decisive turn in late 1978 (two years after Mao Zedong's death) with the rise of Deng Xiaoping and the launching of long-overdue economic reforms (the de facto privatization of farming, modernization of industry, and partial return to private enterprise), and accelerated after China joined the World Trade Organization (WTO) in 2001. In 1972, China had no trade with the US; 1984 was the last year the US had a surplus trading goods with Beijing; in 2009, China became the world's largest exporter of goods; and by 2018 its exports accounted for more than 12 percent of all global sales, and its trade surplus with the US reached nearly $420 billion before declining by about 18 percent in 2019 due to rising tensions between the two economic superpowers.[68] But it is too early to forecast any long-term retreat in trade or return to ever-tighter economic integration.

After decades of the Cold War, the USSR began to unravel during the late 1980s. Its satellite states detached themselves first (the Berlin Wall fell on November 9, 1989), and the Soviet state was officially dissolved on December

26, 1991.[69] For the first time in history, it became possible for every major economy to become open (still to varying, but in nearly all cases unprecedented, degrees) to foreign investment, intensifying international trade, and populations previously forbidden to travel freely abroad joined mass-scale tourism and took advantage of new opportunities to emigrate and to temporarily work and study abroad. Trade expansion took place within a globally agreed framework provided by the WTO.[70]

India, with its messy electoral and multiethnic politics, has not been able to replicate China's post-1990 rise driven by the unchallenged rule of a single party, but the record of its per capita GDP growth during the first two decades of the 21st century indicates a clear departure from the previous decades of poor performance. Between 1970 and 1990, the country's per capita GDP (in constant monies) had actually declined in six separate years and stayed below 4 percent for four years, while between 2000 and 2019 there was an annual growth above 4 percent for 18 of those years.[71] Moreover, since 2008 the country's annual growth of merchandise exports has been, at 5.3 percent, only slightly behind China's 5.7 percent, and the impact of India's software engineers in Silicon Valley (where they have been the single most important contingent of skilled immigrants in the industry) has been far above Chinese contributions.[72]

India's rise has coincided with the marginalization of the Congress party that ruled the country for decades after it gained its independence in 1947, while both Russia and China have retained many attributes of central economic and social control. Unlike in the new, nationalist, Russia, the Communist Party remains in firm command in China, but both countries have allowed (with notable repressive exceptions) freedom of travel that has led to new waves of tourists—with favorite destinations being the

Mediterranean countries for the Russians; Thailand, Japan, and Europe for the Chinese—and there has been an unprecedented influx of Chinese, Indian, and South Korean students to the West, above all to the US.

International trade's share in the world economic product rose from about 30 percent in 1973 to nearly 61 percent in 2008, while the total volume of trade (in constant monies) increased almost exactly sixfold, with most of the rise taking place since 1999.[73] The financial crisis of 2008–2009 cut the total volume by a tenth and trade's share of economic output by about 15 percent in 2009, but by 2018 overall trade was 35 percent above the 2008 peak and trade's share of the world economic product was back above 59 percent—and the numbers changed little in 2019. Foreign direct investment (measured as net outflows per year) is another obvious marker of globalization. In 1973 its global total was less than $30 billion (about 0.7 percent of the global economic product); two decades later it rose to $256 billion; but by 2007 it soared to $3.12 trillion (nearly 5.5 percent of the global product), a 12-fold increase in just 14 years, with Asia (and above all China) as the main destination.[74]

A Russian team measured the progress of post-2000 globalization by combining all key markers—that is by analyzing changes in the trade in goods, trade in services, and accumulated stocks of bilateral foreign direct investment (particularly important for China), and also migrants (nonexistent in China, but important for the American economy).[75] Not surprisingly, the results show the largest gains for previously isolated Russia, other former European communist economies, and China, and also for India, some African countries, and Brazil. Moreover, as a result of these shifts, by 2017 the global connectedness of China was as high as that of Japan; Russia's rivaled that of Sweden; and India could be

compared with Singapore. If any of these pairings strikes you as questionable, just think of China's place as the largest manufacturer of consumer goods, of Russia's enormous exports of energy and minerals, and of the (already noted) contingent of Indian software engineers in Silicon Valley.

Globalization's multiples

Perhaps the best way to appreciate the technical advances that made this truly unprecedented globalization possible is to express their progress as multiples of their capacities, ratings, efficiencies, or performances. As already explained, the technical foundations for this dizzying round of globalization were laid before 1973, but its extent and intensity since then has demanded enormous investment in prime movers (combustion engines and electric motors in transportation) and in essential infrastructures (ports, airports, containerized shipping). As a result, we have not only more of them, but their average capacities (power, volume, throughput) have become larger, while their typical efficiencies and reliabilities have become better. So let's look at the advances that have taken place in shipping, flying, navigating, computing, and communicating since the early 1970s.

Post-1973 globalization has more than tripled the mass of seaborne trade and brought major shifts in its composition.[76] While in 1973 tanker traffic (dominated by crude oil and refined products) accounted for more than half of the transported total, in 2018 goods amounted to about 70 percent, a shift reflecting not only the rise of Asia —and, above all, China—as the world's leading source of consumer goods, but the overall increase in integration and interdependence: German carmakers assemble vehicles in Alabama, Texas-made chemicals (taking advantage of the

boom in the extraction of natural gas) provide feedstocks for EU industries, Chilean fruits are exported to four continents, and Somali camels are shipped to Saudi Arabia.

This tripling of shipped mass between 1973 and 2019 required (when measured in deadweight tons) a near quadrupling of the global merchant fleet capacity. Deadweight tonnage of oil tankers slightly more than tripled, the tonnage of container ships increased about 4.5 times, and the size of the global container fleet expanded roughly 10-fold in 45 years to 5,152 ships in 2019. This order-of-magnitude increase was accompanied by a massive shift of container activity to China: in 1975, China had no container traffic and US and Japanese ports accounted for nearly half of the global activity; in 2018, China (including Hong Kong) held a 32 percent share, while the combined US and Japanese share was less than 10 percent.

As for maximum ship sizes, in 1972 and 1973 Malcolm McLean launched his largest container vessels, each with a capacity of 1,968 standard steel containers (nearly five times larger than his first converted vessels in 1957). In 1996, *Regina Maersk* could load 6,000 standard units; by 2008 the maximum was 13,800; and in 2019 the Mediterranean Shipping Company put into service six giant vessels each able to carry 23,756 standard containers, hence a 12-fold increase of maximum vessel capacity between 1973 and 2019.[77] Inevitably, this mass-scale conversion to container shipping required the commensurate conversion of freight trains and truck transportation, and these intermodal chains now bring the goods from a city in China's interior to the loading dock of a Walmart in Missouri.

And when the shipment of expensive food or flowers (freshly caught tuna from Atlantic Canada to Tokyo; green beans from Kenya to London; roses from Ecuador to New

York) or high-value electronics require speed, they go by air. The belly hold of every passenger airplane carries goods, as does the growing fleet of air freighters: as a result, between 1973 and 2018 global airfreight (expressed in ton-kilometers) rose about 12-fold, while scheduled passenger traffic rose from about 0.5 trillion to more than 8.3 trillion passenger-kilometers, nearly a 17-fold gain.[78] Nearly two-thirds (5.3 trillion passenger-kilometers) of the latest total were on international flights—the equivalent of flying nearly half a billion people a year from New York to London and back again.

An increasing share of these flights is being taken by international tourists. In the early 1970s their annual global total (dominated by Americans and Western Europeans) was below 200 million; by 2018 the new record reached 1.4 billion.[79] Europe remains the main tourist destination, accounting for half of the total arrivals—with France, Spain, and Italy being the continent's most visited countries. For generations the US led overall tourist expenditures, but it was surpassed by China in 2012 and five years later Chinese tourists were spending twice as much as Americans. The rather sudden multiplication of arrivals and their disproportionate concentration in several major cities (Paris, Venice, Barcelona) has led to complaints by their permanent residents and to the first moves to limit the numbers of daily or annual visitors.[80]

The long reach of Moore's law

Increases in moving materials, products, and people, as well as the necessity of delivering materials or components just in time for new industries working without extensive inventories, were enabled (and made more reliable) by gains in navigation, tracking, computing, and communication, and much-expanded capabilities were also

needed to accommodate the new deluge of international data flows. All of these advances have one fundamental technical foundation: our ability to emplace more components on an integrated circuit whose progress—doubling roughly every two years—has been, so far, conforming to the prediction made by Gordon Moore, at that time Fairchild Semiconductor's director of research, in 1965.[81]

In 1969, Moore became Intel's co-founder, and (as already noted) in 1971 the company released its first microprocessor (microchip), with 2,300 components. Microprocessor fabrication had eventually advanced from large-scale integration (up to 100,000 components) to very large-scale integration (VLSI, up to 10 million components), and to ultra large-scale integration (ULSI, up to a billion components).[82] The 10^5 mark (100,000 transistors) was reached in 1982, and in 1996, to celebrate the machine's 50th anniversary, a group of students at the University of Pennsylvania recreated ENIAC by putting 174,569 transistors on a 7.4 mm × 5.3 mm silicon microchip: the original machine was more than 5 million times heavier, it required about 40,000 times more electricity, and the recreated chip was 500 times faster.[83]

And the progress continued: the 10^8 mark was surpassed in 2003, 10^9 in 2010, and by the end of 2019 AMD released its Epyc CPU with 39.5 billion transistors.[84] This means that between 1971 and 2019 microprocessor power increased by seven orders of magnitude—17.1 billion times, to be exact. These advances were more than enough to accommodate new demands for massive data transfers (from Earth observation, spy and communication satellites, and among financial centers and data storages), instant e-mail and voice calls and highly accurate navigation.

That last capability has benefited from advances in radar detection and by the setting up and subsequent expansion

and improvement of global positioning systems (GPS): the first (American) system was fully operational in 1993, and three other systems (Russia's GLONASS, EU's Galileo, China's BeiDou) followed.[85] As a result, everybody with a computer or a mobile phone can now see worldwide shipping and aviation activities in real time, just by clicking on the MarineTraffic website and watching cargo vessels (green icons) converging on Shanghai and Hong Kong, lining up to pass between Bali and Lombok, or going up the English Channel; to see tankers (red) debouching from the Persian Gulf, tugs and special craft (turquoise) serving the oil and gas production rigs in the North Sea, and fishing vessels (light brown) roaming the central Pacific (and there are many more ships there and elsewhere that do not show on the screen, because, while fishing illegally, they turn off their transponders).[86]

Analogical, and no less fascinating, is the click-away opportunity to monitor all commercial flights.[87] Early morning in Europe shows a long arc of staggered flights approaching the continent after crossing the Atlantic during the night from North and South America; evenings in North America show the long streams of jetliners following the optimal flight paths to Europe; transpacific flights to Japan converge on Narita and Haneda during late afternoons and early evenings Tokyo time. Moreover, flight tracking makes it possible to trace changing flight paths that take into account the frequently shifting position of the jet stream.[88] Less frequent flight-path adjustments are caused by the progress of major cyclones, or by ash clouds emitted by volcanic eruptions.[89]

Inevitability, setbacks, and overreach

The history of globalization reveals an undeniable long-term trend toward greater international economic

integration that is manifested by intensified flows of energies, materials, people, ideas, and information, and that is enabled by improving technical capabilities. The process is not new, but only thanks to many post-1850 innovations could it have reached its recent intensity and extent. But, as some past setbacks indicate, these technical advances do not make continued progress inevitable: most notably, the first half of the 20th century saw a significant retreat from economic globalization and hence also from the accompanying international movement of people. The reasons for this retreat are obvious, as the decades were marked by an unprecedented concatenation of large-scale tragedies and reversals of national fortunes.

The list, limited to the key events, includes the end of the Qing, China's last imperial dynasty (1912); the First World War (1914–1918); the end of Czarist Russia, when the Bolsheviks took power and years of civil war followed, ending with the establishment of the USSR (1917–1921); the unraveling of the Ottoman Empire (final dissolution by 1923); the political instability in Europe of the postwar 1920s; the stock market collapse in late October 1929; the subsequent worldwide economic crises that lasted for most of the 1930s; Japan's invasion of Manchuria (1931), the true beginning of another great war; the Nazi takeover of Germany (1933); the Spanish civil war (1936–1939); the Second World War (1939–1945); the renewed civil war in China (1945–1949); the beginning of the Cold War (1947); and Mao's proclamation of the People's Republic of China (1949). The retreat of economic globalization was substantial. The share of trade in global GDP fell from about 14 percent in 1913 to about 6 percent in 1939 and then to only 4 percent in 1945.[90]

And the accelerated post-1990 pace of globalization did not depend on just having superior technical means; it would have been impossible without concurrent major

political and social transformations, most notably the post-1980 return of China to international commerce, followed (between 1989 and 1991) by the dismantling of the Soviet Empire. This means that the high degree of globalization reached during the first two decades of the 21st century has not been inevitable, and that it can be weakened by future developments. To what extent (marginally or substantially) and how rapidly (fast due to major power confrontations, gradually as a generational affair) is impossible to foresee.

Much seems to be firmly set in place. A great deal of accreted globalization, especially many changes that unfolded during the past two generations, is here to stay. Too many countries now rely on food imports, and self-sufficiency in all raw materials is impossible even for the largest countries because no country possesses sufficient reserves of all minerals needed by its economy. The UK and Japan import more food than they produce, China does not have all the iron ore it needs for its blast furnaces, the US buys many rare earth metals (from lanthanum to yttrium), and India is chronically short of crude oil.[91] The inherent advantages of mass-scale manufacturing preclude companies from assembling mobile phones in every city in which they are purchased. And millions of people will still try to see iconic distant places before they die.[92] Moreover, instant reversals are not practical, and rapid disruptions could come only with high costs attached. For example, the global supply of consumer electronics would suffer enormously if Shenzhen suddenly ceased to function as the world's most important manufacturing hub of portable devices.

But history reminds us that the recent state of things is unlikely to last for generations. British and American industries were the global leaders as recently as the early 1970s. But where are Birmingham's metal-working

factories or Baltimore's steel furnaces now? Where are the great cotton mills of Manchester or of South Carolina? By 1965, Detroit's big three still had 90 percent of the US car market; now they do not have even 45 percent. Until 1980, Shenzhen was a small fishing village, when it became China's first special economic zone, and now it is a megacity with more than 12 million people: what role will it play in 2050? A mass-scale, rapid retreat from the current state is impossible, but the pro-globalization sentiment has been weakening for some time.

The accelerated deindustrialization of North America, Europe, and Japan, and the shift of manufacturing to Asia in general and to China in particular, has been the leading reason for this reappraisal.[93] This manufacturing switch has brought changes ranging from risible to tragic. In the first category are such grotesque transactions as Canada, the country with per capita forest resources greater than in any other affluent nation, importing toothpicks and toilet paper from China, a country whose wood stocks amount to a small fraction of Canada's enormous boreal forest patrimony.[94] But the switch has also contributed to tragedies, such as the rising midlife mortality among America's white non-university-educated men. There can be no doubt that America's post-2000 loss of some 7 million (formerly well-paying) manufacturing jobs—with most of that loss attributable to globalization, as most of that production moved to China—has been the principal reason of these deaths of despair, largely attributable to suicide, drug overdose, and alcohol-induced liver disease.[95]

And we now have solid quantitative confirmation that globalization did reach a turning point in the mid-2000s. This development was soon obscured by the Great Recession of 2008, but McKinsey's analysis of 23 industry value chains (interconnected activities, from design to retail, that deliver final products) spanning 43 countries

between 1995 to 2017 shows that goods-producing value chains (still growing slowly in absolute terms) have become significantly less trade-intensive, with exports declining from 28.1 percent of gross output in 2007 to 22.5 percent in 2017.[96] What I see to be the study's second-most important finding is that, contrary to common perception, only about 18 percent of the global goods trade is now driven by lower labor costs (labor arbitrage), that in many chains this share has been declining throughout the 2010s, and that global value chains are becoming more knowledge-intensive and rely increasingly on highly skilled labor. Similarly, an OECD study shows that the expansion of global value chains stopped in 2011 and since then has slightly declined: there has been less trade in intermediate goods and services.[97]

Add to this the (justified or exaggerated, thoughtful or demagogic) fears about globalization's impact on national sovereignty, culture, and language; about diluting cherished peculiarities in the solvent of commercial universality (with concerns ranging from the ubiquity of American fast-food chains to the essentially unchecked power of social media); and, contrary to promised benefits, worries about globalization's role in economic and social inequality. Even a restrained appraisal of these real and perceived negatives confirms enough downsides to question any future intensification of the process, and in 2020 COVID-19 reinforced such sentiments.

Arguments for reshoring many kinds of manufacturing in order to gain greater resilience and reduce unexpected disruptions are not new. The progress of globalization and the actions of multinational companies have been questioned and criticized since the 1990s and, more recently, these sentiments became part of electoral discontent in some countries, most notably in the UK and the US.[98] But as the COVID-19 pandemic unfolded, a

remarkable lineup of institutions began to publish analyses and appeals for the reorganization of global supply chains. The OECD looked at the policy options to build more resilient production networks that would rely less on imports from distant places and that could better withstand global trade interruptions. The United Nations Conference on Trade and Development considered repatriating manufacturing from Asia to North America and Europe and a shift to shorter, less fragmented value chains—extending from design through manufacturing to distribution within a single country or a single economic unit—that would produce a higher concentration of value added. Swiss Re produced a report about the de-risking of global supply chains (rebalancing them to strengthen resilience). And the Brookings Institution saw the reshoring of advanced manufacturing as the best way to create good jobs.[99]

Questioning and criticizing globalization has gone beyond narrowly ideological arguments, and the COVID-19 pandemic provided additional powerful arguments based on irrefutable concerns about the state's fundamental role in protecting the lives of its citizens. That role is hard to play when 70 percent of the world's rubber gloves are made in a single factory, and when similar or even higher shares of not just other pieces of personal protective equipment but also of principal drug components and common medications (antibiotics, antihypertensive drugs) come from a very small number of suppliers in China and India.[100] Such dependence might fulfill an economist's dream of mass output at the lowest possible unit cost, but it makes for extremely irresponsible—if not criminal—governance when doctors and nurses have to face a pandemic without adequate PPE, when states dependent on foreign production engage in dismaying competition for limited supplies, and when patients around the world

cannot renew their prescriptions because of the slowdowns or closures in Asian factories.

And security concerns created by excessive globalization go far beyond the health-care sector. Rising US imports of large Chinese transformers create worries about the availability of spare parts and about the potential for future grid destabilization, and there is little need to repeat the arguments about the much-publicized ban on Huawei's participation in the 5G networks of some Western nations.[101] Not surprisingly, the reshoring of manufacturing could be the wave of the future, both in North America and in Europe: a 2020 survey showed that 64 percent of American manufacturers said that reshoring is likely following the pandemic.[102]

Will this sentiment persist? As I never fail to stress, I do not forecast, and hence I am not offering any specific numbers concerning the retreat or continuation of the pre-COVID levels of globalization in general, or of the reshoring of manufacturing capacities in particular. I just try to appraise the range of the most likely outcomes, and while in recent years it has looked increasingly as if most aspects of globalization will not soar to new highs, in 2020 this notion became entirely unexceptional: we may have seen the peak of globalization, and its ebb may last not just for years but for decades to come.

5. Understanding Risks

From Viruses to Diets to Solar Flares

One sweeping, simplifying way to describe the advances of modern civilization is to see them as serial quests to reduce the risks that come from us being complex and fragile organisms trying to survive against many odds in a world abounding with dangers. The previous chapters have documented how successful we have been in this quest. Higher crop yields have improved food supply, lowered its costs, and reduced the risks of malnutrition, stunting, and childhood diseases stemming from undernutrition. Most notably, the combination of expanded food production, extensive food trade, and emergency food aid have eliminated the long-standing inevitability of recurrent famines.[1]

Better housing (more space, running and hot water, central heating), better hygiene (no single improvement being more important than more soap and the more frequent washing of hands), and better public health measures (ranging from mass-scale vaccinations to food safety oversight) have improved domestic comfort, reduced the risks of infections spread from contaminated water, cut the frequency of foodborne pathogens, and largely eliminated the dangers of carbon monoxide poisoning from wood-fired stoves.[2] Various engineering advances and public safety measures reduced industrial and transportation accidents. Car accidents (with fatalities now in excess of 1.2 million a year) would be much more deadly without the improvements in car design and protective

features (anti-intrusion bars guarding against side impacts, seat belts, airbags, brake lights at the driver's eye level, and, increasingly, automatic braking and lane-departure correction) that have cut the risks of collision and serious injury.[3]

International treaties set down transparent rules that promote reliability and safety (such as reducing the risks of importing contaminated goods) and that make regrettable events subject to legal action (such as pursuing a parent who abducted a child to another country).[4] And despite the impression created by media reporting, the worldwide frequency of violent conflicts and the total number of their casualties have been declining for decades.[5] But given the complexity of our bodies, the enormity and unpredictability of natural processes, and the impossibility of eradicating all human errors made when designing intricate machines and when operating them, it is not at all surprising that risks continue to abound in the modern world.

Even people who take no particular steps to be well informed are routinely exposed to media reports of man-made and natural dangers and the risks of diets, diseases, and quotidian activities. The first category ranges from dreaded terrorist attacks to many manifestations of chemophobia (from pesticide residues in food to carcinogens in toys or carpets), and from asbestos hidden in walls and in baby powder to the planet being ruined by anthropogenic global warming.[6] Media reports do not miss any news of natural catastrophes—including hurricanes, tornadoes, floods, droughts, and locusts—and in the background there are lasting worries about incurable cancers and unpredictable viruses, with recent concerns about SARS-CoV-1 and Ebola just mild previews of the anguish brought by the COVID-19 (SARS-CoV-2) pandemic.[7]

The list can be easily extended by adding worries about mad cow disease (bovine spongiform encephalopathy), *Salmonella* or *Escherichia coli*, exposure to hospital microbes (nosocomial infections), non-ionizing radiation from mobile phones, cybersecurity and data theft, artificial intelligence designs or genetically engineered organisms getting out of control, the accidental launch of nuclear missiles, and a stray, unobserved asteroid hitting the planet. With such a recital we might easily conclude that we are now exposed to more risks than ever—or, in contrast, that the incessant (and exaggerated) reporting of such events or their possibilities has simply made us more aware of their existence and that proper risk perception would provide some calming perspectives. And that is exactly what I will do in this chapter. Yes, the world is full of constant or episodic risks, but it is also replete with wrong perceptions and irrational risk appraisals. There are many reasons for these misperceptions and miscalculations, and practitioners of risk analysis have published revealing findings regarding their origins, prevalence, and endurance.[8]

But before I get to the analyses, quantifications, and comparison of man-made and natural risks, let’s start with the basics. What should we eat to promote a long life? Given the veritable minefield of modern dietary claims and counterclaims, this might seem to be an impossible, or at least very difficult, question to answer. How will I weigh the respective merits and demerits of diets ranging from unchecked carnivory to the purest veganism? The first one, promoted as the supposed Paleolithic diet, supplies more than a third of all food energy from meat protein; the other extends beyond never swallowing even a microgram of animal matter to never wearing leather shoes, knitted woolen sweaters, or silk blouses. The first appeals to a caricature of some of our distant evolutionary roots; the

second offers the surest path to the preservation of the long-suffering biosphere because humble plants, unlike destructive domesticated animals, exert only the gentlest pressure on the environment.[9]

My approach to finding the least risky diets (those associated with life expectations above 80 years) will ignore not only all of the dubious dietary claims promoted by the media, but also, perhaps more surprisingly, scores of publications in scientific journals. In particular, those that have examined the links between diets, diseases, and longevity by following groups of various sizes and ages for shorter or longer periods of time while relying overwhelmingly on the participants' recollections of all the food they have eaten in the past. I will also disregard metastudies of such projects. Merely listing these post-1950 publications—from the examination of coronary heart disease and saturated fat and cholesterol, to the risks of eating meat and drinking milk—would fill a small book, and a busy segment of these inquiries has been devoted to exposing the fallibility of human memory (what did you eat last week? I bet you can't remember, or at least not accurately), as well as detailing other methodological or analytical shortcomings, such that this field is rife with accusations of invalid conclusions.[10]

No wonder most people find the question of what we should eat a difficult one. These studies, and their metastudies, have repeatedly failed to produce consistent clear-cut outcomes, with new research often upending previous findings.[11] Is there a better way out of these generations-long, and still unfolding, dietary conundrums? Indeed, it is quite simple. We can look at which populations live the longest and what their diets are.

Eating as in Kyoto—or as in Barcelona

Among the world's more than 200 nations and territories, Japan has had the highest average longevity since the early 1980s, when its combined (male and female) life expectancy at birth surpassed 77 years.[12] Further gains followed, and by 2020 Japan's combined life expectancy at birth was about 84.6 years. Women live longer in all societies, and by 2020 their life expectancy in Japan was about 87.7 years, ahead of 86.2 years in second-place Spain. Average longevity is an outcome of complex and interacting genetic, lifestyle, and nutritional factors. Trying to find out to what extent it is determined by diet alone is impossible, but if there are unique features to a nation's diet, they clearly deserve a closer examination.

Is there anything truly special about Japan's food consumption that would provide a ready explanation of that diet's contribution to the nation's record longevity? All of its traditional ingredients consumed in substantial quantities differ only subtly from those eaten or drunk in abundance in neighboring Asian nations. The Chinese and Japanese consume different, but nutritionally equivalent, varieties of the same subspecies of rice (*Oryza sativa japonica*). The Chinese have traditionally coagulated their bean curd (*dòufu*) with calcium sulfate (*shígāo*), while the Japanese bean curd (*tōfu*) is gelled with magnesium sulfate (*nigari*), but the ground legume grain is identically rich in protein. And unlike unfermented Japanese green tea (*ocha*), Chinese green tea *(lǜchá*) is partially fermented. These are not differences in nutritional quality, merely matters of appearance, color, and taste.

The Japanese diet has undergone an enormous transformation during the past 150 years. The traditional diet, consumed by most of the nation before 1900, was insufficient to support the population's growth potential and it resulted in short statures among both women and men; slow pre–Second World War improvements

accelerated after the country overcame food shortages following its defeat in 1945.[13] The consumption of milk, first introduced at school lunches to prevent malnutrition, began to rise, and white rice became abundant. Seafood supply expanded rapidly as the country built the world's largest fishing (and whaling) fleet. Meat became a part of common Japanese dishes, and many baked goods emerged as favorites in this traditionally non-baking culture. Higher incomes and hybridization of tastes brought increases in mean blood cholesterol levels, blood pressure, and body weight—and yet heart disease did not soar and longevity increased.[14]

The latest published surveys show Japan and the US to be surprisingly close in total food energy consumed per day. In 2015–2016, US males consumed only 11 percent more, and US women not even 4 percent more food energy per day than their Japanese counterparts did in 2017. The two countries diverged moderately in total carbohydrate (Japan was ahead by less than 10 percent) and protein (with Americans less than 14 percent ahead) consumption, and both nations were well above the needed protein minima. But there is a major gap in terms of average fat intake, with American males consuming about 45 percent more and women 30 percent more than the Japanese. And the greatest disparity is in sugar intake: among US adults it is about 70 percent higher. When recalculated in terms of average annual differences, Americans have recently consumed about 8 kilograms more fat and 16 kilograms more sugar every year than the average adult in Japan.[15]

The widespread availability of ingredients, and easy access to cooking instructions and recipes on the internet, means that you too can minimize your risk of premature mortality and start eating *à la japonaise*—be it the country's traditional cuisine, *washoku*, or its adaptations of foreign meals (Wienerschnitzel appearing as pre-sliced

tonkatsu; curry and rice transformed into gooey *kare raisu*).[16] But before you start breakfasting on miso soup (*miso shiru*), lunching on plain cold *onigiri* (rice balls wrapped in *nori*, dried seaweed), and dining on *sukiyaki* (meat and vegetable stew) a second opinion might be in order: what would the best European model of diet and longevity do?

The Spanish women are the runners-up in the world's record life expectancy, and the country traditionally followed the so-called Mediterranean diet, with high intakes of vegetables, fruits, and whole grains complemented by beans, nuts, seeds, and olive oil. But as the average incomes in Spain rose, they rapidly changed those habits to a surprisingly high degree.[17] Until the late 1950s, Franco's impoverished Spain continued to eat very frugally. Typical diets were dominated by starches (annual consumption of cereals and potatoes added up to about 250 kilograms per capita) and vegetables; meat supply (carcass weight) remained below 20 kilograms per capita and actual consumption was less than 12 kilograms (of which a third was mutton and goat meat); *aceite de oliva* was the most important plant oil (about 10 liters a year); and only sugar consumption (about 16 kilograms in 1960) was high in relation to other foodstuffs.

Dietary changes accelerated after Spain joined the EU in 1986, and by the year 2000 it became Europe's leading carnivorous nation (after more than quintupling the average per capita supply to just above 110 kilograms per year). A subsequent slight decline cut the rate (carcass weight) to about 100 kilograms per capita in 2020, but that is still twice the Japanese mean! And with dairy products and cheeses added to fresh meat and the enormous quantity and variety of *jamones* (hams cured by salting and prolonged drying), it is hardly surprising that the Spanish supply of animal fat is four times the Japanese rate.[18]

Spaniards now consume almost twice the volume of plant oils as the Japanese—but their consumption of olive oil is about 25 percent lower than in 1960.

Higher incomes have only increased the traditional predilection for sugary creations, and the adoption of pop drinks did the rest: since 1960, per capita consumption of sugar has doubled and it is now about 40 percent above the Japanese level. At the same time, Spanish wine-drinking has been relentlessly declining, from about 45 liters per capita in 1960 to just 11 liters by 2020, and beer has become by far the country's most-consumed alcoholic drink. The way Spain now eats is substantially different from the way Japan feeds itself—and, most definitely (being the continent's top carnivore), this diet hardly resembles the frugal, near-vegetarian, and life-lengthening legendary Mediterranean diet.

But despite a more meaty, fatty, and sugary diet (and also rapidly abandoning drinking its supposedly heart-protecting wines), Spain's cardiovascular mortality has kept on declining and life expectancy has been rising. Since 1960, Spain's CVD mortality has been falling at a faster pace than the average of affluent economies, and by 2011 it was about a third lower than their mean; and since 1960, Spain has added more than 13 years to its combined (male and female) longevity prospect, raising it from 70 to more than 83 years by 2020.[19] This is just one year less than in Japan: is one additional year of life (and there are high chances that it might be spent in physical or mental decrepitude, or a combination of both) worth replacing half of the meat you eat with tofu?

Think of what you might be missing: those paper-thin slices of *jamón ibérico*; that well-roasted pig (even if not done as famously as at Sobrino de Botín, a short walk south of the Plaza Mayor, where they have been preparing it for nearly 300 years); that well-cooked *polpo gallego*, octopus

stewed with potatoes, olive oil, and paprika. These are, truly, existential decisions to make—but the conclusion is reasonably clear. If we were to stake longevity (accompanied by healthy and active life) solely on the prevailing diet—which, however important, is but one element of a bigger picture that includes your inherited genes and surrounding environment—then Japanese eating has a slight edge, but an only slightly inferior outcome can be had by eating as they do in Valencia.

This is a vastly consequential but relatively simple risk assessment: one choice, based on convincing data, can suffice for decades to come. Other risk assessments are invariably trickier, where metrics might not be as simple as years lived. The risks of specific activities change over time (driving in the US is now generally much safer than half a century ago, but after 50 years of driving your skills might have deteriorated and you pose a greater risk to yourself and others when you get behind the wheel). And if you want to know if intercontinental flying (which you might do infrequently) is riskier than downhill skiing (which you may have done for many years), you must have a rather accurate comparative yardstick. And how does one compare the risks experienced in different nations—say, driving in the US, being struck by lightning while hiking in the Alps and getting killed by an earthquake in Japan? As it turns out, we can do some remarkably accurate, comparative evaluations of all of these risks.

Risk perceptions and tolerances

In his pioneering 1969 analysis of risks, Chauncey Starr—at that time the dean of the School of Engineering and Applied Science at the University of California in Los Angeles—stressed the major difference in risk tolerance between voluntary and involuntary activities.[20] When

people think that they are in control (a perception that may be incorrect but that is based on previous experiences and hence on the belief that they can assess the likely outcome), they engage in activities—climbing vertical rock faces without ropes, skydiving, bullfighting—whose risks of serious injury or fatality may be a thousand-fold higher than the risk associated with such dreaded involuntary exposure as a terrorist attack in a large Western city. And most people have no problem engaging daily and repeatedly in activities that temporarily increase their risk by significant margins: hundreds of millions of people drive every day (and many apparently like to do so), and an even higher risk is tolerated by an even larger number of smokers[21] —in affluent countries, decades of education has reduced their ranks, but worldwide there are still more than 1 billion of them.

In some cases this disparity between tolerating voluntary risks and trying to avoid wrongly perceived risks of involuntary exposures becomes truly bizarre, as people refuse to have their children inoculated (voluntarily exposing them to multiple risks of preventable diseases) because they consider government requirements to protect their children (an involuntary imposition) as unacceptably risky—and have been doing so on the basis of repeatedly discredited “evidence” (most notably linking vaccination to a higher incidence of autism) or rumored perils (the implanting of microchips!).[22] And the SARS-CoV-2 pandemic elevated these irrational fears to a new level. Humanity’s best hope to end the pandemic was mass-scale vaccination, but long before the first vaccines were approved for distribution, large shares of the population were telling pollsters that they would not get inoculated.[23]

Widespread fear of nuclear electricity generation is yet another excellent example of risk misperception. Many people smoke and drive and eat excessively but have

reservations about living next to a nuclear power plant, and polling has shown lasting and pervasive distrust of this form of electricity generation despite the fact that it has prevented a large number of air pollution–related deaths that would have been associated with burning fossil fuels (by 2020, nearly three-fifths of the world's electricity came from fossil fuels, and just 10 percent from nuclear fission). And the comparison between overall risks of nuclear and fossil-fueled electricity generation does not flip even when the best estimates of all latent fatalities from the two major accidents (Chornobyl in 1985 and Fukushima in 2011) are included.[24]

Perhaps the most stunning contrast of nuclear-related risk perceptions is seen when comparing France and Germany. France has been deriving more than 70 percent of its electricity from nuclear fission since the 1980s and nearly 60 reactors dot the country's landscape, cooled by water from many French rivers, including the Seine, Rhine, Garonne, and Loire.[25] Yet the longevity of the French population (second only to Spain within the EU) is the best testimony to the fact that these nuclear power plants have not been a discernible source of ill health or premature deaths—but across the Rhine it is not only the German Greens who believe that nuclear power is an infernal invention that must be eliminated as fast as possible, but much larger portions of society too.[26]

This is why many researchers have argued that there is no "objective risk" waiting to be measured because our risk perceptions are inherently subjective, dependent on our understanding of specific dangers (familiar vs. new risks) and on cultural circumstances.[27] Their psychometric studies showed that specific hazards have their unique patterns of highly correlated qualities: involuntary risks are often associated with the dread of new, uncontrollable, and unknown hazards; voluntary hazards are more likely to be

perceived as controllable and known to science. Nuclear electricity generation is widely perceived as unsafe, x-rays as tolerably risky.

Feelings of dread play an outsized role in risk perception. Terrorist attacks are perhaps the best example of this differentiated tolerance, as fear takes over and drives out rational assessment readily made on the basis of incontrovertible evidence. Because of their unpredictable timing, location, and scale, terrorist attacks rank high on the psychometric scale of dread, and these fears have been intensively exploited by vastly exaggerated pseudo-analyses offered by talking heads on 24/7 news channels: during the past two decades they have speculated on everything from suitcase-sized nuclear bombs detonated in mid-Manhattan to the poisoning of reservoirs used to supply drinking water to large cities and the spraying of deadly engineered viruses.

Compared to such dreaded attacks, driving presents largely voluntary, highly recurrent, and very familiar risks, and accidental deaths involve overwhelmingly (more than 90 percent of cases) only one person per fatal collision. As a result, societies tolerate the global toll exceeding 1.2 million deaths a year, something they would never assent to if it were to take the form of recurrent accidents in industrial plants or collapsed structures (bridges, buildings) in or near large cities, even if the combined annual death toll of such disasters was an order of magnitude smaller—"just" in the hundreds of thousands of fatalities.[28]

Large differences in individual tolerance of risk are best illustrated by the fact that many individuals engage—voluntarily and repeatedly—in activities that others might consider not just too risky but belonging all too clearly to the category of death wish. Base (fixed object) jumping is an excellent example of such an activity, as the slightest

delay in opening the parachute may cost a life—a free-falling body reaches fatal velocity in a matter of seconds.[29] And then there is risk tolerance justified by fatalistic beliefs: diseases or accidents are predestined and inevitable, and hence it makes no sense to try enhancing one's health or preventing mishaps by appropriate personal action.[30]

Fatalistic people also underestimate risks in order to avoid the effort required to analyze them and draw practical conclusions, and because they feel totally unable to cope with them.[31] Traffic fatalism has been particularly well studied. Fatalistic drivers underestimate dangerous driving situations, are less likely to practice defensive driving (no distractions, keeping safe trailing distance, no speeding), and are less likely to restrain their children with seat belts or to report involvement in road accidents. Worryingly, studies in some countries found traffic fatalism prevalent among taxi drivers, and pervasive among minibus drivers.[32]

There is little we can do to convert base jumpers into paragons of risk-averse behavior or to convince many taxi drivers that their accidents are not predetermined. But we can use the best available understanding of risks, both of those in everyday life and those that are exceedingly uncommon but potentially deadly, to quantify their consequences and hence to compare their impacts. This is not an easy task, because we have to deal with such a variety of events and processes. Moreover, there is no perfect metric to do so, and there can be no universal yardstick to compare the ubiquitous risks faced daily by billions of individuals with the extraordinarily rare events that may take place just once in a hundred, a thousand, or even ten thousand years, but with catastrophic global consequences. In any case, that is what I will try to do.

Quantifying the risks of everyday life

For older people the danger starts even before waking up: heart attacks (acute myocardial infarctions) are more common, and more severe, during the dark-to-light transition period.[33] When they get up, one of the most common ways older people injure themselves is to fall. In the US, millions of accidental falls take place every year, leaving bruises or broken bones—and more than 36,000 deaths, disproportionately among those more than 70 years old, and often occurring not when walking up or down stairs but when simply losing balance or tripping over a carpet edge.[34] And once you make it to your kitchen there are food-associated risks, from *Salmonella* in improperly cooked eggs to pesticide residue in tea (this is a minuscule but, for drinkers of non-organic tea, everyday exposure).[35]

A morning drive may be on an icy road or a drugged-up driver could go through a red light. Your office walls may still hide old asbestos insulation, and faulty air conditioning may spread *Legionella* bacteria. Your coworkers may infect you with seasonal flu or (as happened in 2020–2021, 2009, 1968, and 1957) with a new pandemic virus. You may have a severe allergic reaction to a nut accidentally admixed into a nut-free chocolate bar. If it is tornado season in Texas or Oklahoma you might return from work to see your home turned into a pile of rubble, and if you live in Baltimore you cannot remain unconcerned about the city's homicide rate that is an order of magnitude higher than in Los Angeles, the city famous for its gangs.[36] And as hardly any generic drugs are made domestically (they come mostly from China and India), your drugstore may not fill your prescription because a contaminated batch was pulled from distribution.[37]

And detailed data on age- and sex-specific death rates show how the reasons for (and hence the concerns about)

getting mortally sick change as people grow older. The latest statistics show that among males in England and Wales heart disease dominates from the early 50s to the late 70s, and for women breast cancer becomes the most dreaded disease by their mid-30s and it remains so until their mid-60s; afterwards, lung cancer is the single largest cause of death among females, and dementia and Alzheimer's disease have recently displaced ischemic heart disease as the leading cause of death for both sexes over 80 years of age.[38]

Quantifying common risks seems to be a daunting enterprise. How does one compare the risks of dying due to an unusually severe seasonal influenza epidemic to the risk of a mortal injury resulting from occasional weekend kayaking or snowmobiling; or the risk of frequent transpacific flying to the risk of habitual eating of California-grown lettuce that might be repeatedly contaminated with *Escherichia coli*? And how do we express fatal risks? Per standard number of people (1,000; 1 million) in an affected population? Per unit of hazardous substance, per unit of time exposure, or per unit of ambient concentration?

A uniform metric able to subsume fatalities and injuries or economic losses (whose totals could differ by orders of magnitude among different societies) and chronic pain (something that remains notoriously unquantifiable) is clearly an impossible objective. But the finality of dying provides a universal, ultimate, and incontestably quantifiable numerator that can be used for comparative risk assessment. The simplest and most obvious way to make some revealing comparisons is to use a standard denominator and to compare annual frequencies of causes of death per 100,000 people. When using the US statistics (the latest published detailed breakdown is for 2017) this leads to some surprising outcomes.[39]

Homicides take almost as many lives as leukemia (6 vs. 7.2), a dual testament to the advances in treating that malignancy and to the extraordinary violence of American society. Accidental falls kill almost as many people as the dreaded pancreatic cancer with its short post-diagnosis survival (11.2 vs. 13.5). Motor vehicle accidents take twice as many lives (and, moreover, much younger ones) than does diabetes (52.2 vs. 25.7), and accidental poisoning and noxious substances exact a higher death toll than does breast cancer (19.9 vs. 13.1). But these comparisons use the same denominator (100,000 people) without taking into account the duration of exposure to a given cause of death. Homicides can, and do, take place in public and private and at any time of day or night, and the exposure to this risk is thus 24 hours a day, 365 days a year—but motor vehicle accidents (including those that kill pedestrians) can happen only when somebody is driving, and most Americans spend only about an hour behind the wheel every day.

A more insightful metric then is to use the time during which people are affected by a given risk as the common denominator, and do the comparisons in terms of fatalities per person per hour of exposure—that is, the time when an individual is subject, involuntarily or voluntarily, to a specific risk. This approach was introduced in 1969 by Chauncey Starr in his evaluation of social benefits and technological risks and I still find it preferable to another general metric—that of micromorts.[40] These units define a micro probability, a one-in-a-million chance of death per specific exposure, and express it per year, per day, per surgery, per flight, or per distance traveled—and these non-uniform denominators do not make for easy across-the-board comparisons.

Overall death rates (per 1,000 people) are well monitored worldwide, both for populations at large and for each sex by specific age group.[41] Overall mortality depends heavily

on the population's average age. In 2019 the global mean was 7.6/1,000, while Kenya's mortality (despite a lower standard of nutrition and health care) was less than half of the German rate (5.4 vs. 11.3) because Kenya's median age of just 20 years is less than half of Germany's 47 years. Data on deaths due to specific diseases are also commonly available—with cardiovascular diseases accounting for a quarter of the total in the US (2.5/1,000) and cancers for a fifth (2/1,000)—as is the information on deaths due to injuries (ranging from about 1.4 for falls and 1.1 for transport accidents, to 0.7 for encounters with animals and just 0.03 for accidental poisonings) and natural disasters.[42]

The entire year (8,766 hours when corrected for leap years) is the denominator for overall mortality, for chronic diseases, and for natural disasters such as earthquakes or volcanic eruptions that can strike anytime. But in order to calculate risks for such common activities as driving or flying, we have to ascertain first the totals of specific populations engaged in these activities and then to estimate the average hours of annual exposure. The same sequence applies to quantifying the risks of dying in a hurricane or a tornado: these cyclones are not around every day of the year and do not affect the entirety of large countries.

Calculating the baseline, the average population-wide or sex- and age-specific risk of overall mortality, is easy. In 2019, overall mortality (crude death rate) of well-off (developed) countries clustered at around 10/1,000, with actual rates ranging from 8.7 for North America to 10.7 in Japan and 11.1 for Europe. That annual mortality of 10/1,000 (with 1,000 people subject to dying for 8,766 × 1,000 hours) prorates to 0.000001 or 1×10^{-6} per person per hour of exposure. Cardiovascular diseases are the leading cause of mortality in all affluent countries and they account for nearly a quarter of that total (3×10^{-7}).

Seasonal influenza carries a risk an order of magnitude lower (usually about 2×10^{-8} and up to 3×10^{-8}), and even in the violence-prone United States the risk of homicide has recently been just 7×10^{-9} per hour of exposure, half the risk of death attributable to falls (1.4×10^{-8}). But, as already noted, the frequency of the latter kind of accidental death is highly skewed, with people over 85 years of age having a risk of 3×10^{-7} compared to just 9×10^{-10} for people 25–34 years old.[43]

To reverse the conclusion about general mortality, in affluent countries the overall risk of natural demise amounts to 1 person among 1 million dying every hour; every hour, 1 person among about 3 million dies of heart disease and 1 among roughly 70 million dies of an accidental fall. Such odds are sufficiently low not to preoccupy an average citizen of any affluent country. Sex- and age-specific numbers are, inevitably, different. While Canada's overall mortality for both sexes is 7.7/1,000, for young (20–24 years) males it is only 0.8/1,000 but for men of my age (75–79 years) it is 35/1,000, and my group's risk is then 4×10^{-6} per person per every hour of being alive, four times the rate for the population average.[44]

Before I turn to quantifying the risks of voluntary activities, I should clarify the dangers associated with hospital stays. They are unavoidable because of many conditions (and in many countries also increasingly for elective cosmetic surgeries), and high patient throughputs make it more likely that medical errors will happen. In 1999, the first study of preventable medical errors found that anywhere between 44,000 and 98,000 of them are made in the US every year.[45] That was an uncomfortably high total—and in 2016 a new study raised it to 251,454 cases in 2013 (and possibly to as many as 400,000 deaths), making it the third-highest cause of US mortality in that year, behind heart disease (611,000) and cancers (585,000)

and ahead of chronic respiratory disease (149,000).[46] These results, widely reported in the mass media, implied that every year 35–58 percent of all hospital deaths in the country were due to medical error.

When put in this way, the implausibility of those claims become easily evident: careless errors surely take place, regrettable omissions do happen, but that they could add up to anywhere between just over a third and nearly three-fifths of all hospital deaths would brand modern medicine as an extraordinarily inept, if not outright criminal, endeavor. Fortunately, these high mortalities did not result from carelessness but from data-handling errors.[47] The latest study of mortality associated with adverse effects of medical treatment (AEMT) sets the record straight: it found 123,063 such deaths between 1990 and 2016 (mostly due to surgical and perioperative errors), a decline of 21.4 percent to 1.15 AEMT deaths per 100,000 people.[48]

Men and women had similar rates, but states differed significantly, with California as low as 0.84 AEMT deaths per 100,000. In absolute terms this averages to about 4,750 deaths a year, less than 2 percent of the lowest estimate published in 2016.[49] Translated into a comparative risk metric, this results in about 1.2×10^{-6} fatalities per hour of exposure, which means that any elderly male reader of this book (whose general mortality risk is between 3×10^{-6} and 5×10^{-6}) will increase his risk of demise due to AEMT by no more than about 20–30 percent during the few days of an average stay in an American hospital—and that, I would argue, is a very encouraging risk finding!

Voluntary and involuntary risks

How much do we increase these baseline risks, or risks associated with such unavoidable events as emergency

operations or short hospital stays required for medical evaluations, by voluntary exposures through participating in a wide variety of more or less risky endeavors? And how much should we worry about unavoidable involuntary risk resulting from natural hazards ranging from earthquakes to floods?

As already noted, these are useful categories for risk assessment, but the distinction between voluntary and involuntary exposures is not always obvious. There are clear-cut voluntary (and fairly to very risky) activities such as smoking or engaging in extreme sports; and obviously unavoidable involuntary risks both at an individual level (including the exceedingly low danger of being hit by a meteorite) and as collective, indeed a planet-wide, experiences (the Earth colliding with an asteroid being the foremost example).

But many risky exposures cannot be so easily assigned, because there is no clear dichotomy between voluntary and involuntary risks: driving to work may be a matter of choice for a family that built a dream exurban house, but it is a matter of unavoidable necessity for millions of people in North America with its notoriously poor mass transit systems. And if a young man wants to stay in Newfoundland, there are not that many choices beyond becoming a fisherman or a worker on a massive oil-producing platform, both being far more risky occupations than moving to Toronto, learning how to code, and writing apps in a glassed office far away from the rock jutting into the North Atlantic.

Keeping these complications in mind, I will first explain the risks associated with driving and flying, activities that globally involve hundreds of millions of vehicle drivers and passengers and recently more than 10 million paying fliers every day. For both activities, we must start by accurately counting the number of deaths and then deploying necessary assumptions in order to define affected

populations and their aggregate time of exposure to a given risk.

For driving it is obviously time spent behind the wheel (or as a passenger). For the US we have totals of distances traveled every year by all motor vehicles and by passenger cars (a recent grand total has been about 5.2 trillion kilometers annually) and, after declining for many years, traffic fatalities have gone up slightly to about 40,000 a year.[50] In order to estimate the time spent driving, we have to divide the distance driven by average speed—and, obviously, this number can be only a defensible approximation, not an accurate rate. Intercity speeds show less variation, but urban speeds tend to drop by as much as 40 percent during recurrent rush hours. Assuming an average combined speed of 65 km/hour (about 40 mph) gives us annually about 80 billion driving hours in the US, and with 40,000 fatalities this translates exactly to 5×10^{-7} (0.0000005) fatalities per hour of exposure. Neither the fact that traffic fatalities also include pedestrians and bystanders killed by vehicles nor the deployment of other plausible average speeds (say, 50 or 70 km/hour) would change the order of magnitude. Driving is an order of magnitude more dangerous than flying, and during the time a person is driving the average chance of dying goes up by about 50 percent compared to staying at home or tending a garden (as long as that does not include climbing a tall ladder or working with a large chainsaw).

And for men of my age group the driving-risk bump is only 12 percent above the overall risk of dying. Driving risks in the US also show significant differences due to gender and population groups. The lifetime risk of dying in a motor vehicle accident is only 0.34 percent for Asian American females (1 out of 291) but 1.75 percent (1 of every 57) for Native American males, while the risk for all individuals is 0.92 percent (1 out of 109).[51] Of course, in

other countries where people drive much less than Americans and Canadians but where the accident rates are much higher (they are about twice as common in Brazil, three times as much in sub-Saharan Africa), the risks are up to an order of magnitude greater.[52]

Scheduled commercial flights, already a very low-risk activity at the end of the last century, got appreciably safer during the first two decades of the 21st century. This conclusion stands despite some disturbing recent losses, including the still-unsolved (and likely never to be explained) disappearance of Malaysia Airlines flight 370 somewhere over the Indian Ocean in March 2014, followed by the downing of Malaysia Airlines flight 17 over eastern Ukraine in July 2014, and the two crashes of the new Boeing 737 MAX—Lion Air flight 610 in the Java Sea (October 29, 2018) and Ethiopian Airlines flight 302 near Addis Ababa (March 10, 2019).[53]

Perhaps the most revealing way to compare the airline industry's fatalities is per 100 billion passenger-kilometers flown. This rate was 14.3 in 2010, it reached a record low of 0.65 in 2017, but it increased to 2.75 in 2019. Flying in 2019 was thus more than five times safer than in 2010, and more than 200 times safer than at the beginning of the jetliner era in the late 1950s.[54] Expressing these fatalities in terms of risks per hour of exposure is fairly straightforward. The mean 2015–2019 total of accidental deaths was 292; the averages of 68 trillion passenger-kilometers flown and 4.2 billion passengers mean that average passengers flew about 1,900 kilometers and spent about 2.5 hours in flight; the total of about 10.5 billion passenger-hours spent aloft and 292 fatalities translates to 2.8×10^{-8} (0.000000028) fatalities per person per hour of flying. This is only about 3 percent of the general risk of mortality while aloft, and in the case of a septuagenarian male the risk while aloft rises by a mere 1 percent. Any

rational frequent flyer (and even more so an elderly one) should worry more about encountering unforeseen delays, running the security theater gauntlet, enduring the tedium of long-distance flying, and coping with the debilitating effects of jetlag.

At the opposite end of the voluntary risk spectrum are activities whose brief duration carries a high probability of death. None is riskier than base jumping from cliffs, towers, bridges, and buildings. The most reliable study of this “asking for it” madness looked at an 11-year period of jumping from the Kjerag Massif in Norway, where 1 in every 2,317 jumps (9 in total) resulted in death,[55] with an average exposure risk of 4×10^{-2} (0.04). For comparison, in skydiving a fatal accident used to take place roughly once every 100,000 jumps but the latest US data show one fatality for every 250,000 jumps. With a typical descent lasting five minutes the exposure risk is only about 5×10^{-5}, still 50 times higher than just sitting in a chair for those five minutes—but it is only about 1/1,000 of the risk associated with base jumping.[56] Again, only very few people are actually aware of these specific numbers, but nearly all people (save for the risk-tolerant few) behave as if they have internalized them.

In 2020 in the US, about 230 million people held a driver’s license (exposure risk behind the wheel is 5×10^{-7} per person per hour); about 12 million were downhill skiers (2×10^{-7} while descending); the United States Parachuting Association has about 35,000 members (5×10^{-5} while aloft); the US Hang Gliding & Paragliding Association has about 3,000 members and what they do (depending on the length of flights lasting anywhere between 20 minutes and a few hours) carries a fatality risk of 10^{-4} to 10^{-3}; and although base jumping has been increasing in popularity (particularly in Norway and Switzerland), in the US it is still confined to a few hundred mostly male fate-tempters

whose risk of dying is 4×10^{-2} during their brief falls.[57] The strong inverse relationship between the risk and overall participation in an activity is obvious: large numbers of people are willing to risk a dislocated shoulder or a sprained ankle while skiing downhill on a groomed run; very few are into launching themselves into the void from precipices.

Finally, a few key numbers concerning one of the most dreaded modern involuntary exposures: the risk of terrorism. Between 1995 and 2017, 3,516 people died in terrorist attacks on US soil, with 2,996 fatalities (or 85 percent of that total) on September 11, 2001.[58] Countrywide individual exposure risk thus averaged 6×10^{-11} during those 22 years, and for Manhattan it was two orders of magnitude higher, increasing the risk of just being alive by one-tenth of a percent, a quantity that is too small to be meaningfully internalized. In less fortunate countries, the recent toll of terrorist attacks has been much higher: in Iraq in 2017 (with more than 4,300 deaths) the risk rose to 1.3×10^{-8}, and in Afghanistan in 2018 (7,379 deaths) to 2.3×10^{-8}, but even that rate raises the basic risk of being alive by just a few percent and it remains lower than the risk people voluntarily assume by driving (particularly in places with no lanes and ad hoc traffic rules).[59]

But correct as they are, these comparisons also show the inherent limits of dispassionate quantification. Most people commuting to work by car drive only at specific times, spend rarely more than an hour or an hour and a half per day on the road, follow familiar routes, and (save for inclement weather or an unexpected traffic jam) feel pretty much in control. In contrast, during times of peak terror, bombings or shooting attacks in Kabul or Baghdad took place at unpredictable times and intervals, in many public places—from mosques to markets—and there is no reliable

way to completely avoid such threats while living in a city. As a result, the lower exposure rates to terrorist threats carry an unquantifiable accompaniment of dread, qualitatively so different from being concerned about possibly slippery roads during a morning commute.

Natural hazards: less risky than they look on TV

And how do recurrent deadly natural hazards compare with just being alive, and with the risks of extreme sports? Some countries are repeatedly (but not very frequently) subject to just one or two kinds of catastrophic events—flooding and extremely strong winds in the case of the UK—while the US has to cope every year with many tornadoes and extensive flooding, frequently with hurricanes (since the year 2000, nearly two hurricanes a year made a landfall) and heavy snowfalls, and its Pacific states are always at risk of experiencing a major earthquake and possible tsunami.[60]

Tornadoes kill people and destroy homes every year, and detailed historical statistics make it possible to calculate accurate exposure risks. Between 1984 and 2017, 1,994 people were killed in the 21 states with the highest frequency of these destructive cyclones (the region between North Dakota, Texas, Georgia, and Michigan, with about 120 million people), and about 80 percent of those deaths took place in the six months of the year from March to August.[61]

This translates to about 3×10^{-9} (0.000000003) fatalities per hour of exposure, a risk that is three orders of magnitude lower than just living. Very few inhabitants of America's tornado-swept states are aware of this rate but they recognize—as do people in other areas subject to recurrent natural catastrophes—that the probability of being killed by a tornado is sufficiently small, and hence

the risk of continued living in such regions remains acceptable. Widely broadcast images of destruction left by powerful tornadoes make viewers living in atmospherically less violent regions wonder why people say that they will rebuild on the same spot. But such decisions are neither irrational nor recklessly risky, and because of them millions of people continue to live in the Tornado Alley that extends from Texas to South Dakota.

Remarkably, calculations of exposure risks to other commonly encountered natural disasters around the world converge on the same order of magnitude (10^{-9}) or yield even lower rates. Again, these low average fatality exposure rates help to explain why entire countries come to terms with the ever-present risks of earthquakes. Between 1945 and 2020, Japanese earthquakes (which can affect every part of the island nation) killed about 33,000 people, more than half as a result of the March 11, 2011 Tōhoku earthquake and tsunami (15,899 deaths and 2,529 missing).[62] But for a population that grew from 71 million in 1945 to nearly 127 million in 2020, that works out to about 5×10^{-10} (0.0000000005) fatalities per hour of exposure, four orders of magnitude lower than the country's overall mortality rate: obviously adding 0.0001 to 1 can hardly be a decisive factor that changes the overall assessment of life's risks.

Floods and earthquakes in most parts of the world carry exposure risks mostly on the order of between 1×10^{-10} and 5×10^{-10}, and the post-1960 rate for American hurricanes (potentially affecting about 50 million people in the coastal states from Texas to Maine and killing, on average, about 50 people a year) has been about 8×10^{-11}.[63] That is a remarkably low rate—either very similar to or perhaps even lower than what most people would consider an exceptionally low natural risk: being killed by lightning. In recent years, lightning has killed fewer than

30 people a year in the US, and when assuming that the danger applies only when outdoors (averaging four hours a day) and during the six months from April to September (when about 90 percent of all lightning occurs) the risk equals about 1×10^{-10}, while extending the exposure period to 10 months lowers it to 7×10^{-11} (0.00000000007).[64]

The fact that US hurricanes now present a fatality risk no greater than lightning illustrates how their toll has been reduced by satellites, advanced public warnings, and evacuations. At the same time, there are reasons for concern, as both the annual worldwide frequency of natural disasters and their economic cost have been increasing. We can say this with a high degree of confidence because the world's largest reinsurance companies (whose profits and losses depend on the unpredictable occurrences of earthquakes, hurricanes, floods, and fires) have been carefully monitoring their trends for decades.

Insurance is an ancient practice of providing different degrees of compensation for a variety of risks. While life insurance is based on highly predictable survival rates, insuring against unpredictable major natural hazards forces insurance companies to share the risk associated with such disasters by securing their own insurance. As a result, the world's largest reinsurance companies (Swiss Re, German Munich Re and Hannover Rueck, French SCOR, US Berkshire Hathaway, British Lloyd's) are the most assiduous students of natural catastrophes because their very existence depends on making proper calls: in order to avoid rising insured losses, they should not set their insurance premiums on the basis of outdated numbers that would underestimate future risks.

Numbers of all natural catastrophes recorded by Munich Re show expected year-to-year fluctuations but the upward trend has been unmistakable: a slow increase between

1950 and 1980, a doubling of annual frequency between 1980 and 2005, and about a 60 percent rise between 2005 and 2019.[65] Overall economic losses (reflecting exceptional burdens stemming from major disasters) show even greater annual fluctuations and an even steeper rising trend. When measured in constant 2019 monies, the pre-1990 record was about $100 billion, while 2011 set an all-time record of just over $350 billion and that total was nearly matched in 2017. Insured losses ranged mostly between 30 and 50 percent of total losses, with the 2017 record reaching nearly $150 billion.

Until the 1980s, the rising disaster toll was mainly attributable to greater exposure (resulting from growing populations and economies), and while this trend continues —there are more people with more insured property living in disaster-prone regions—recent decades have seen changes in natural hazards themselves: a warmer atmosphere holds more water vapor (increasing the chances of extreme precipitation); prolonged droughts in some regions cause recurrent fires of exceptional duration and intensity. Many models now forecast further intensification of these trends, but we also know that many effective measures—from setting up exclusion zones and restoring wetlands to enacting proper building codes—can be taken to reduce their impacts.

In order to get even lower risks from exposures to natural or man-made hazards, one must hunt for truly exceptional events such as people killed by a falling meteorite or by debris from an increasing number of orbiting satellites. A report by the US National Research Council estimated that, given the quantity of space debris hitting the Earth, there should be 91 deaths a year—and that would imply about 1×10^{-12} fatalities per hour of exposure for the global population of 7.75 billion. In reality, there have been no recorded deaths since 1900, and only

recently the first written proof of a meteorite killing a man (and leaving another paralyzed) was discovered among the manuscripts in the General Directorate of State Archives of the Ottoman Empire: the event took place on August 22, 1888, in what is now Sulaymaniyah in Iraq.[66] But even if one person were killed every year, the rate would be merely 10^{-14}—or eight orders of magnitude smaller (1/100,000,000 as large) than just being alive, so clearly not a reason to worry.[67] As for the orbiting space junk, by 2019 there were some 34,000 pieces larger than 10 centimeters and more than 25 times as many pieces measuring 1–10 centimeters. All of these pieces break up as they re-enter the atmosphere, but even small pieces present collision risks in increasingly congested prime-orbit space.[68]

Ending our civilization

When we think about rare but truly extraordinary risks that have global effects, and even more so when we contemplate catastrophic events that could severely damage or even end modern civilization, we do so on an altogether different mental plane: those real (albeit very low) risks belong to a very different perception category. As with every event that might take place in a possibly quite distant future, we strongly discount their impact and, as demonstrated yet again by the 2020 pandemic, we are chronically unprepared to deal even with those risks whose recurrence is measured in decades, not in centuries or millennia.

Risks with truly global impacts fall into two very different categories: relatively frequent viral pandemics that can exact a considerable toll in a matter of months or a few years; and exceedingly rare but uncommonly deadly natural catastrophes that could take place within spans as short as a few days, hours, or seconds but whose

consequences might persist not only for centuries but for millions of years, far beyond any civilizational horizons. Should a nearby supernova explode and flood the Earth with lethal doses of radiation from cosmic rays, would we have enough time (between the arrival of light and radiation) to improvise shelters for most of the global population?[69] But should this be a worry at all?

A blast that would damage the Earth's ozone layer must take place less than 50 light-years away, but all of our "nearby" stars that might possibly explode are much farther than this, and while a gamma-ray burst could affect Earth from as far as 10,000 light-years once every 15 million years, the closest such burst on record was 1.3 billion light-years away.[70] Clearly, this risk belongs to a largely academic category—rather than guessing when it might happen, we should, given the frequency of such events, better ask: will any terrestrial civilization be around in, say, 150,000 or half a million years? Although it is a comparatively more probable event, calculating the risk of an inevitable future collision of the Earth with an asteroid is another exercise in uncertainties and in assumptions whose particularities can make an enormous difference. Encounters with asteroids or large comets happened in the past and they will happen in the future—but do we assume that a major encounter takes place once every 100,000 years or once every 2 million years?[71]

These are relatively short spans on a geological timescale but are far too long to be used for any revealing calculations of the likely risks per year (to say nothing about per hour of exposure). Moreover, global consequences would be very different if such an object struck the Pacific Ocean near Antarctica than if it hit Western Europe or eastern China. In the first case, much of the damage would come from a monstrous tsunami but (depending on the asteroid's size) there might be little dust

entering the atmosphere. In the second and third cases the impact would instantly obliterate large concentrations of the population and industrial activity, and throw enormous masses of powdered rocks into the atmosphere, creating a pronounced planet-wide cooling.

Americans should not worry either about supernovas or asteroids, but if they want to scare themselves by thinking about an inevitable natural catastrophe (and one that would emanate from one of the country's cherished places!) then they should consider another mega-eruption of the Yellowstone supervolcano.[72] Geological evidence shows nine eruptions during the past 15 million years, with the last three known eruptions occurring 2.1 million, 1.3 million, and 640,000 years ago. Of course, the dating of just three events offers no basis for predicting any periodicity, but still a thought intrudes: taking the mean interval of 730,000 between eruptions we would have still 90,000 years of waiting left, but if the first interval was 800,000 years and the second one was 660,000 years then a similar shortening would indicate the next span being some 520,000 years—and a new eruption would be already more than 100,000 years overdue!

And whatever the interval, the consequences would depend on the magnitude of the eruption, on its duration, and on prevailing winds. The last eruption released about 1,000 cubic kilometers of volcanic ash, and the prevailing northwesterly winds would carry the plume over Wyoming (where the deepest deposits could be several meters thick), Utah, and Colorado and onto the Great Plains, affecting states from South Dakota to Texas and burying some of the country's most productive agricultural land under 10–50 centimeters of ash. The combination of advance warning (due to constant seismic monitoring) and a weaker, prolonged eruption might make large-scale evacuation possible, and the loss of housing, infrastructure, and

cultivable land would then be far greater than any immediate casualties. A thin covering of volcanic ash could be plowed into the soil (and actually improve its fertility), but thicker layers would be unmanageable and they would pose additional dangers once dislodged by rains and snow melt, resulting in silting and flooding and creating problems for decades to come.

Perhaps the best example of a natural risk that would not directly kill anybody, but that would cause enormous planet-wide disruptions resulting in a large number of indirect casualties, is the possibility of a catastrophic geomagnetic storm caused by a coronal mass ejection.[73] The corona is the outermost layer of the Sun's atmosphere (it can be seen without special instruments only during a total solar eclipse) and is, paradoxically, hundreds of times hotter than the Sun's surface. Coronal mass ejections are enormous (billions of tons) expulsions of explosively accelerated material that carry an embedded magnetic field whose strength greatly surpasses that of background solar wind and the interplanetary magnetic field. Coronal ejections begin with the twisting and reconfiguration of the magnetic field in the layer's lower part; they produce solar flares and can travel (expanding as they advance) at speeds as slow as less than 250 km/s (arriving at the Earth in nearly seven days) and as fast as almost 3,000 km/s (reaching the Earth in as little as 15 hours).

The largest known coronal mass ejection began on the morning of September 1, 1859, while Richard Carrington, a British astronomer, was observing and drawing a large solar sunspot that emitted a sizable, kidney-shaped white flare.[74] That was nearly two decades before the first telephones (1877) and more than two decades before the first centralized commercial generation of electricity (1882), and hence the notable effects were only intense auroras and disruptions of the newly expanding telegraph

network whose laying began in the 1840s: wires were sparking, messaging was interrupted or continued in bizarrely truncated ways, operators got electric shocks, some fires started accidentally.

Some of the subsequent strongest events took place on October 31–November 1, 1903 and May 13–15, 1921, when the extent of both wired telephone links and electricity grids was still fairly limited even in Europe and North America, and very sparse elsewhere. But we got a preview of what a substantial coronal mass ejection could do today in March 1989 when a much smaller (a non-Carrington) event knocked out Quebec's entire power grid, serving 6 million people, for nine hours.[75] More than three decades later we have become much more vulnerable: just think of everything electronic, from mobile phones to e-mail to international banking, and about GPS-guided navigation on every vessel and airplane and now also on tens of millions of cars.

We would find out before it hits: our constant surveyance of the Sun's activity would instantly detect any mass ejection and provide at least 12–15 hours of prestrike warning. But only when the ejection reaches the point where we have stationed the Solar and Heliospheric Observatory (SOHO), about 1.5 million kilometers away from the Earth, could we gauge its intensity; and by then the time to react would be reduced to less than an hour, perhaps even to just 15 minutes.[76] Even limited damage would mean hours or days of disrupted communications and grid operations, and a massive geomagnetic storm would sever all of these links on a global scale, leaving us without electricity, without information, without transportation, without the ability to make credit card payments or to withdraw money from banks.

What would we do if the complete restoration of all these vital but severely crippled infrastructures took years,

perhaps even a decade, to accomplish? Estimates of global damage differ by an order of magnitude, from $2 trillion to $20 trillion[77] —but that refers only to expenditures, not to the value of lives lost during prolonged spells without communication, lights, air conditioning, hospital equipment, refrigeration, and industrial production (and hence also without adequate inputs into crop cultivation).

There is some good news. A 2012 study estimated a 12 percent probability of another Carrington Event during the coming ten years—or a one-in-eight chance, and it emphasized that the rarity of these extreme events makes their rate occurrence difficult to estimate "and prediction of a specific future event is virtually impossible."[78] Given this uncertainty, it is not surprising that in 2019 a group of scientists in Barcelona calculated the risk to be no greater than 0.46–1.88 percent during the 2020s, and hence even the highest rate would mean odds of 1 in 53, a considerably more comforting probability.[79] And in 2020 a Carnegie Mellon group offered an even lower estimate, putting a decadal (10-year) probability of between 1 percent and 9 percent for an event of at least the size of the large 2012 event, and between 0.02 percent and 1.6 percent for the size of the 1859 Carrington Event.[80] While many experts are well aware of these odds and of the enormity of the potential consequences, this is clearly one of those risks (much like a pandemic) for which we cannot ever be adequately prepared: we just have to hope that the next massive coronal ejection event will not equal or surpass the Carrington Event.

While this may not be what the world wants to hear at this time, it is an unfortunate truth that viral pandemics are guaranteed to reappear with relatively high frequency and, although sharing inevitable commonalities, they are unpredictably specific in their impacts. In early 2020 the world had about a billion people older than 62 years, and

they had all lived through three viral pandemics in a single lifetime: 1957–1959 (H2N2), 1968–1970 (H3N2), and 2009 (H1N1).[81] The best reconstruction of the total mortality for the 1957–1959 pandemic was 38/100,000 (1.1 million deaths; global population 2.87 billion), the 1968–1970 pandemic had a mortality of 28/100,000 (1 million deaths; global population 3.55 billion), while the 2009 event had low virulence and mortality no higher than 3/100,000 (about 200,000 deaths; global population 6.87 billion).[82]

Arrival of the next event was just a matter of time, but as already noted we are never prepared for these (relatively) low-frequency threats. The World Economic Forum's ranking of top global risks, prepared annually between 2007 and 2015, led with asset price collapse, financial crisis, and major systemic financial failure eight times (obvious echoes of 2008) and water crises once, while pandemic threat did not appear among the top three risks even once.[83] So much for the collective foresight of global decision-makers! And when COVID-19 (caused by SARS-CoV-2) arrived, the World Health Organization waited until March 11, 2020 to proclaim a global pandemic, and its early advice (echoed by many governments) was against suspending international flights and against wearing masks.[84]

Obviously, we will be able to quantify the total COVID-19 mortality only after this latest pandemic ends. Meanwhile, the best way to assess the recurrent pandemic burden is to compare it to global seasonal influenza-associated respiratory mortality. The most detailed assessment for the years 2002–2011 found a mean of 389,000 deaths (ranging between 294,000 and 518,000) after excluding the 2009 pandemic season.[85] This means that seasonal influenza accounts for about 2 percent of all annual respiratory deaths, and that its mortality rate averages 6/100,000—or 15–20 percent of the death rates recorded in the two late

20th-century pandemics (1957–1959, 1968–1970). Inversely stated, the first pandemic exacted a more than six times higher and the second one a nearly five times higher relative death toll than seasonal influenza.

Moreover, there is an important difference in age-specific mortality. Seasonal flu mortality is, almost without exception, highly skewed toward old age, with 67 percent of all deaths among people over 65. In contrast, the infamous second wave of the 1918 pandemic disproportionately targeted people in their 30s; the 1957–1959 pandemic had a U-shaped mortality frequency, disproportionately affecting ages 0–4 and 60+; while COVID-19 mortality has been, much like seasonal influenza, highly concentrated in the 65+ cohort, especially among those with significant comorbidities, and it has left children remarkably unaffected.[86]

We know that many excess deaths among older people cannot be prevented: that is a part of the price we must pay for our very successful efforts to extend life expectancy (in many affluent countries by more than 15 years since the 1950s).[87] A death certificate may say COVID-19 or viral pneumonia, but that is just the proximate label—the real cause is that most of us have not been designed to be without underlying health problems as we keep pushing the limits of life expectancy. Provisional COVID-19 data from the CDC make that clear: during the week of the peak US COVID-19 mortality (ending on April 18, 2020), people over 65 years of age accounted for 81 percent of all deaths, and those younger than 35 years for a mere 0.1 percent.[88] This situation is quite different from the 1918–1920 pandemic when as many as 50 million people died. We now know that most of those deaths were due to bacterial pneumonia: some 80 percent of cultures taken from preserved lung tissue samples contained bacteria causing secondary lung infection—and at that time, nearly a quarter-century before

the availability of antibiotics, we had no treatment for that condition.[89]

Moreover, people with tuberculosis were more likely than others to die of influenza, and this link also helps to explain the 1918–1920 pandemic's unusual middle-age mortality as well as its clear maleness (due to the differential incidence of tuberculosis).[90] Because tuberculosis has been essentially eradicated in all affluent countries and because pneumonia is treatable with antibiotics, we can avoid the repetition of high mortalities, but even with our annual influenza vaccination drives we cannot prevent significant seasonal mortality, and the survival of the oldest cohorts will be challenged every time there is a global pandemic. This is a largely self-inflicted risk, the obverse of enjoying longer life expectancy, and we can minimize it by isolating the most vulnerable individuals and by developing better vaccines—but we cannot eliminate it.

Some lasting attitudes

Where risk is concerned, many truisms seem to be permanent. As individuals, we can exercise some control. Many people do not find it difficult to abstain from smoking, consuming alcohol and drugs, and prefer to stay home rather than sharing a cruise ship with 5,000 passengers and 3,000 crew in the midst of a coronavirus or norovirus outbreak. Others crave all of the above, and it is astonishing how many people do not reduce even the most easily—and inexpensively—reducible risks. Always wearing a seat belt, never speeding, being a defensive driver, and installing smoke, carbon monoxide, and natural gas sensors in dwellings are no-cost or very low-cost ways to reduce the risks of driving and of living in structures heated by the combustion of fossil fuels.

Moreover, most people and most governments find it difficult to deal properly with low-probability but high-impact (high-loss) events. Buying basic house insurance is one thing (often it is mandatory); investing in earthquake-resistant structures—be it as individuals or as societies—to minimize the impact of what is likely to be a once-in-a-century event is quite another matter. California has a subsidized seismic retrofit program for pre-1980 houses (bolting, or bolting and bracing, the house to its foundation in compliance with 2016 building code)—but most jurisdictions that face similar seismic risks do not.[91]

But it is difficult, if not impossible, to avoid many exposures, because (as already noted) in some cases there is no clear dichotomy between voluntary and involuntary risks. And most risks are beyond our control. We cannot choose our parents and hence avoid a genetic predisposition to a large number of common and rare diseases, including some cancers, diabetes, cardiovascular problems, asthma, and several autosomal recessive disorders including cystic fibrosis, sickle cell anemia, and Tay-Sachs disease.[92] In order to greatly reduce the risks of all local or regional natural disasters, we would have to eliminate large areas of the planet—above all, those subject to recurrent mega-earthquakes and volcanic eruptions (the Pacific Ring of Fire), destructive cyclonic winds, and extensive flooding—as places of human habitation.[93]

Because that is clearly impossible on an increasingly crowded planet, the only way to improve the odds of survival under those conditions is to take precautions—earthquake-proof (steel-reinforced) buildings will not bury people as surrounding structures collapse; tornado shelters will save families so they can rebuild their leveled homes—and put in place effective early-warning systems and mass-scale evacuation plans to reduce the loss of life caused by cyclones, floods, and volcanic eruptions. While these

measures could potentially save not just hundreds but hundreds of thousands of lives, we have limited defenses or are entirely powerless against many large-scale catastrophes ranging from massive earthquake-triggered tsunami to mega-volcanic eruptions, and from prolonged regional droughts to the Earth's encounters with asteroids or comets.

Another set of truisms applies to our risk assessment. We habitually underestimate voluntary, familiar risks while we repeatedly exaggerate involuntary, unfamiliar exposures. We constantly overestimate the risks stemming from recent shocking experiences and underestimate the risk of events once they recede in our collective and institutional memory.[94] As I already noted, about a billion people have lived through three pandemics, but when COVID-19 struck references were made overwhelmingly to the 1918 episode, as the three more recent (but less deadly) pandemics—unlike the widely remembered fear of polio during the 1950s or AIDS in the 1980s—have left no or only the most superficial impressions.[95]

There are obvious explanations for this amnesia. The 2009 pandemic was essentially undistinguishable from a seasonal influenza, and neither in 1957–1959 nor in 1968–1970 did we resort to near-complete national or continental lockdowns. Inflation-adjusted statistics of global and US economic product show no drastic reversal of long-term growth rates during either of the two late 20th-century pandemics.[96] Moreover, the latter episode coincided with a significant expansion of international air travel: the first wide-body jetliner, the Boeing 747, flew for the first time in 1969.[97] And, perhaps most importantly, we had no 24/7 cable TV news with its morbid attachment to announcing running death counts, no internet rife with ridiculous claims about causes and cures and with conspiracy

theories, and hence no ahistorical but hysterical ways of modern news diffusion.

As COVID-19 demonstrated yet again (and on scales that must have surprised even those who do not expect any good news), we are repeatedly caught ill-prepared for dealing with recurrent high-impact but relatively low-frequency risks such as viral pandemics that take place once in a decade, once in a generation, or once in a century. How would we then cope (all reports and analyses aside) with another Carrington Event, or with an asteroid hitting the ocean near the Azores and causing a massive circum-Atlantic tsunami of the same magnitude as the one caused by the 2011 Tōhoku earthquake—that is, up to 40 meters high and traveling up to 10 kilometers inland?[98]

And the lessons we derive in the aftermath of major catastrophic events are decidedly not rational. We exaggerate the probability of their recurrence, and we resent any reminders that (setting the shock aside) their actual human and economic impact has been comparable to the consequences of many risks whose cumulative toll does not raise any extraordinary concerns. As a result, fear of another spectacular terrorist attack led the US to take extraordinary steps to prevent it. These included multitrillion-dollar wars in Afghanistan and Iraq, fulfilling Osama bin Laden's wish to draw the country into stunningly asymmetrical conflicts that would erode its strength in the long run.[99]

Public reaction to risks is guided more by a dread of what is unfamiliar, unknown, or poorly understood than by any comparative appraisal of actual consequences. When these strong emotional reactions are involved, people focus excessively on the possibility of a dreaded outcome (death by a terrorist attack or by a viral pandemic) rather than trying to keep in mind the probability of such an outcome taking place.[100] Terrorists have always exploited this

reality, forcing governments to take extraordinarily costly steps to prevent further attacks while repeatedly neglecting to take measures that could have saved more lives at a much lower cost per averted fatality.

There is no better illustration of neglected low-cost measures to save lives than the American attitude to gun violence: not even the most shocking iterations of familiar, all-too-well-known mass murders (I always think first of the 26 people, including 20 six- and seven-year-old children, shot in 2012 in Newtown, Connecticut) have been able to change the laws, and during the second decade of the 21st century about 125,000 Americans were killed by guns (the total for homicides, excluding suicides): that is the equivalent of the population of Topeka, Kansas or Athens, Georgia or Simi Valley, California—or of Göttingen in Germany.[101] In contrast, 170 Americans died in all terrorist attacks in the US during the second decade of the 21st century, a difference of nearly three orders of magnitude.[102] When we compare this to motor vehicle accidents, the toll is even more unevenly distributed: as we saw earlier, compared to Asian American females, Native American men are about five times more likely to die in their cars, but African American males are about 30 times more likely to be killed by firearms.[103]

Do I have a helpful parting insight? Perhaps, as long as we recognize these fundamental realities: asking for a risk-free existence is to ask for something quite impossible—while the quest for minimizing risks remains the leading motivation of human progress.

6. Understanding the Environment

The Only Biosphere We Have

This chapter's subtitle is deliberately preventive. I refuse to consider any near-term possibility of leaving the Earth and setting up a civilization on another planet. I do this because, in this post-factual world, musings about soon finding a new celestial abode—most notably, the terraforming of Mars[1] —have been presented as possible options to deal decisively with the problems of the third planet orbiting the Sun. This is yet another favorite topic of the sci-fi genre that will remain confined to its stories: even if we had inexpensive means of interplanetary transport and somehow mastered the construction of Martian bases, we could not create a suitable atmosphere—the processing of Martian polar caps, minerals, and soil would yield only about 7 percent of all the CO_2 that would be needed in order to warm the planet and make its prolonged colonization possible.[2]

Of course, the true believers can call on another sci-fi trick that could enable the colonization of Mars: creating radically genetically re-engineered humans, new super-organisms endowed with qualities of terrestrial tardigrades, tiny eight-legged invertebrates living on grass and in wet ditches. Such organisms would be able to cope not only with the thin atmosphere (its pressure is less than 1 percent of the terrestrial value) but also with the high radiation received by the poorly shielded red planet.[3]

Returning to the real world, if our species is to survive, never mind to flourish, for at least as long as high civilizations have been around (that is, for another 5,000 or so years), then we will have to make sure that our continuing interventions do not imperil the long-term habitability of the planet—or, as modern parlance has it, that we do not transgress safe planetary boundaries.[4]

The list of these critical biospheric boundaries includes nine categories: climate change (now interchangeably, albeit inaccurately, called simply global warming), ocean acidification (endangering marine organisms that build structures of calcium carbonate), depletion of stratospheric ozone (shielding the Earth from excessive ultraviolet radiation and threatened by releases of chlorofluorocarbons), atmospheric aerosols (pollutants reducing visibility and causing lung impairment), interference in nitrogen and phosphorus cycles (above all, the release of these nutrients into fresh and coastal waters), freshwater use (excessive withdrawals of underground, stream, and lake waters), land use changes (due to deforestation, farming, and urban and industrial expansion), biodiversity loss, and various forms of chemical pollution.

Providing systematic reviews of all of these concerns—and setting them in their appropriate historical and environmental perspectives—is a task for a major book, not for a single chapter (unless it consisted of superficial summaries). Instead, I have decided to give this chapter a decidedly utilitarian tilt and focus on just a few key existential parameters, starting with the environmental circumstances of three irreplaceable existential requirements—breathing, drinking, and eating. Provision of these three preconditions of our existence depends on natural goods and services: on the oxygenated atmosphere and its incessant circulation; on water and its global cycle;

and on soils, photosynthesis, biodiversity, and flows of plant nutrients. In turn, their provision affects natural goods and services.

As we will see, these effects range from marginal (oxygen concentrations in the atmosphere are in no danger because of fossil fuel combustion) to obviously negative (excessive water extraction from ancient deep aquifers; serious water pollution generated by food production, cities, and industries) to outright destructive (overgrazing in arid regions leading to desertification; new cropland displacing tropical forests or grasslands).

Oxygen is in no danger

Breathing is the regular delivery of oxygen, carried from our lungs by hemoglobin to all cells in the body to energize our metabolism. No provision of a natural resource is as critical for our survival: duration of bearable voluntary apnea (the cessation of breathing) varies, but if you have never trained yourself to prolong your breathless periods you will find out that you can last as little as 30 seconds and typically no longer than about a minute or so. You might have read about freediving, where men and women risk their lives by holding their breath and diving, without any breathing apparatus, as deep as they can endure (with or without fins), or about static apnea competitions where the contestants lie motionless in a pool of water and hold their breath. The latter record for men is nearly 12 minutes, for women 9 minutes, while hyperventilating with pure oxygen for up to half an hour before an attempt doubles apneic time to more than 24 minutes for men and 18½ minutes for women.[5]

This passes for sport in the 21st century despite the fact that brain cells start to die within five minutes of cerebral hypoxia and that an only slightly longer period can cause

severe damage or death. Oxygen, after all, is the most acutely limiting resource for human survival. Our species, like all other chemoheterotrophs (organisms that cannot internally produce their own nutrition), requires its constant supply. The resting frequency of breathing is 12–20 inhalations a minute, and the daily adult per capita intake averages almost 1 kilogram of O_2.[6] For the global population, that translates to an annual intake of about 2.7 billion tons of oxygen a year, an utterly insignificant fraction (0.00023 percent) of the element's atmospheric presence of about 1.2 quadrillion tons of O_2—and the exhaled CO_2 is readily used by photosynthesizing plants.

The beginnings of the oxygenated atmosphere go back to what has become known as the Great Oxidation Event, which began about 2.5 billion years ago.[7] During that period, oxygen released by oceanic cyanobacteria began to accumulate in the atmosphere, but it took a long time before the gases reached their modern concentrations. During the past 500 million years, atmospheric oxygen levels fluctuated widely, being as low as about 15 percent and as high as 35 percent before they declined to today's nearly 21 percent of the Earth's atmosphere by volume.[8] As well as there being absolutely no danger of people or animals appreciably reducing this level through breathing, there is also no danger of too much oxygen being consumed by even the greatest conceivable burning (rapid oxidation) of the Earth's plants.

The Earth's terrestrial plant mass contains on the order of 500 billion tons of carbon and even if all of it (all forests, grasslands, and crops) were burned at once, such a mega-conflagration would consume only about 0.1 percent of the atmosphere's oxygen.[9] And yet, during the summer of 2019, when large areas of the Amazon rainforest were burning, news media and politicians tried to frighten the scientifically illiterate masses into believing that the world

would start suffocating. One among many, on August 22, 2019 the French president Emmanuel Macron tweeted:[10]

> Our house is burning. Literally. The Amazon rain forest—the lungs which produces 20% of our planet's oxygen—is on fire. It is an international crisis. Members of the G7 Summit, let's discuss this emergency first order in two days!

There was no emergency G7 Summit in two days (or even two months: a good thing too, as if that could fix anything!) and the world keeps on breathing. Depending on where you happen to be on this specific judgmental scale, deliberate burning of the Amazon rainforest is either a highly regrettable and completely misguided policy or an unpardonable crime against the biosphere—but know that it is not an act that will deprive the planet of its oxygen.

This misinformation also illustrates a far wider problem—namely why are we not relying on well-established scientific facts, and instead, why do we let assorted tweets drive public opinion? Appraisals of the environment are perhaps even more prone to unwarranted generalization, biased interpretation, and outright misinformation than those of energy and food production. This tendency must be condemned and resisted: we will not succeed if our actions are based on myths and misinformation. Admittedly, the underlying science is often complex and many verdicts are uncertain and resolute judgments are unadvisable—but not in this particular case.

Most obviously, lungs do not produce oxygen, they process it: the function of lungs is to enable gas exchange as atmospheric O_2 enters the bloodstream and CO_2, the most voluminous gaseous product of metabolism, leaves it. In the process, lungs (as any other organ) must consume oxygen, but it is not easy to measure how much of it they need—that is, to separate their requirement from the

overall intake. The best way to find out is during a total cardiopulmonary bypass, when lung circulation is temporarily separated from systemic blood flow: this shows that lungs consume about 5 percent of the total oxygen we inhale.[11] And while Amazonian trees, as any terrestrial plants, produce O_2 during diurnal photosynthesis, they—again, much as any other photosynthesizing organism—consume virtually all of this oxygen during nocturnal respiration, the process that uses photosynthate to produce energy and compounds for plant growth.[12]

Every year, at least 300 billion tons of oxygen are absorbed and a similar amount is released by terrestrial and marine photosynthesis.[13] These flows, as well as much smaller flows resulting from the burial and oxidation of organic matter, are not perfectly balanced on a daily or seasonal basis, but over the long run they cannot be too far off, otherwise we would have substantial net gains or losses of the element. Instead, oxygen's atmospheric presence has been remarkably stable. Images of burning Amazonian forest, Australian scrubland, Californian hillsides, or Siberian taiga are not ominous harbingers of an atmosphere deprived of the gas we need to inhale at least a dozen times a minute.[14] Massive forest fires are destructive and harmful in many ways, but they are not going to suffocate us because of a lack of oxygen.

Will we have enough water and food?

In contrast, the provision of the second-most acutely required natural input should be very high on our list of environmental worries—and not because there is any absolute shortage of this critical resource but because it is unevenly distributed and because we have not managed it well. And that is an understatement—we waste water enormously and, so far, we have been slow to adopt many

effective changes that would reverse undesirable habits and trends. As we will see, water supply is thus a perfect example of an almost universally mismanaged resource, with the added complication of highly uneven access.[15]

At least we do not have to drink as often as we breathe, a dozen times a minute, not even a dozen times a day—but the provision of adequate volumes of drinking water (which, depending on gender, age, body size, ambient temperature, and excluding extreme activities, is mostly between 1.5 and 3 liters a day) is a matter of basic survival.[16] No rehydration for a day is a trying experience, for two days it becomes perilous, for three days it is usually fatal. Beyond this existential necessity, translating to a per capita average of about 750 kilograms (or liters, or 0.75 cubic meters) of water a year, there are several other—and much more voluminous—water needs: for personal hygiene, cooking, and laundry (even without an indoor toilet, these categories add up to the minima of 15–20 liters a day, or about 7 cubic meters a year), for productive activities, and, above all, for growing food.[17]

Different sectors of water use (agriculture, thermal electricity generation, heavy industries, light manufacturing, services, household) and different categories of water complicate intranational and international comparisons. Blue water includes rainfall entering rivers, water bodies, and groundwater storage that gets incorporated into products or evaporates; the green water footprint accounts for water from precipitation that is stored in soil and subsequently evaporated, transpired, or incorporated by plants; grey water includes all the freshwater required to dilute pollutants in order to meet specific water-quality standards.

This is why national per capita consumption is the best (the most exhaustive) way to assess water footprints: it adds green, blue, and grey water components as well as all

virtual water (water that was required for the growth or production of imported food and manufactured goods).[18] Domestic blue water use (all values are in cubic meters per year per capita) ranges from just over 29 in Canada and 23 in the USA to about 11 in France, 7 in Germany, and about 5 in China and India, and to less than 1 in many African countries.[19] The total water footprint of national consumption reflects specific shares of water used in agriculture (obviously highest in countries with extensive irrigation) and industrial production. As a result, economies with very different climates and sectoral consumption—Canada and Italy, Israel and Hungary—have similar consumption totals (in all of these cases, between 2,300 and 2,400 cubic meters/year/capita). Food imports incorporate considerable amounts of green water, and hence the two countries with the highest dependence on imported food—Japan, South Korea—are also the highest users of virtual water.

Not surprisingly, water's critical role in national economies in general, and in food production in particular, has resulted in many comprehensive appraisals of its availability, sufficiency, scarcity, and vulnerability. At the beginning of the 21st century, water-stressed populations totaled as low as 1.2 billion and as high as 4.3 billion—that is, between 20 and 70 percent of all humanity.[20] Similarly, during the second decade of the 21st century two different measures of water scarcity indicated that the affected populations were between 1.6 and 2.4 billion people.[21] Given these major differences in present assessments, it is impossible to offer strongly defensible conclusions about the future.

There are also many uncertainties concerning the future provision of food. No other human activity has transformed the Earth's ecosystems to a greater extent than the production of food. It already adds up to about a third of

the planet's non-glaciated land, and further impacts are inevitable.[22] The combined area devoted to food production is now more than twice as large as it was a century ago, but in all affluent economies the land under cultivation has either stabilized or has slightly decreased, while the overall global growth of new farmland has slowed down considerably.[23] Given the continent's still-high fertility rates, further expansion of cultivated land will be inevitable in Africa, but only limited extensions should take place in most of Asia, while Europe, North America, and Australia (with already-excessive food production and aging populations) should see further declines in cultivated land.

The amount of land used in food production could be reduced with the combination of better farming practices, reduced food waste, and the widespread adoption of moderate meat consumption. As already explained in chapter 2, reversion to preindustrial farming is inconceivable in a world of nearly 8 billion people, but getting higher yields with existing inputs (agricultural intensification) conforms to a long-established trend, and the elimination of many wasteful practices could produce higher yields even with reduced fertilizer or pesticide use. A convincing large-scale, decade-long (2005–2015) demonstration of this included nearly 21 million farmers cultivating about a third of China's cropland: they were able to raise staple grain yields by 11 percent while reducing the application of nitrogen per hectare by 15–18 percent.[24]

If land is not a limiting resource, and if we have the know-how to manage water supply, what are the prospects for providing the macronutrients our crops need while also limiting the environmental impact of applying nitrogen and phosphorus? As already explained, the Haber-Bosch synthesis of ammonia made it possible to provide a reactive form of nitrogen, the leading macronutrient, in any

desirable quantity.[25] We can also provide adequate amounts of the two mineral macronutrients, potassium and phosphorus. The US Geological Survey puts potassium resources at about 7 billion tons of K_2O (potassium oxide) equivalent; reserves are about half that amount, and at the current rate of production these reserves would last for nearly 90 years.[26]

During the last 50 years there have been periodic comments about imminent phosphorus shortages, some even raising the inevitability of starvation in a matter of decades.[27] Concerns about wasting a finite resource are always appropriate, but there is no imminent phosphorus crisis. According to the International Fertilizer Development Center, the world's phosphate rock reserves and resources are adequate to meet fertilizer demand for the next 300–400 years.[28] The US Geological Survey puts the world resources of phosphate rock at more than 300 billion tons, sufficient for more than 1,000 years at the current rate of extraction.[29] And the International Fertilizer Industry Association "does not believe that peak phosphorus is a pressing issue, or that phosphate rock depletion is imminent."[30]

The real concern about plant nutrients is the environmental (and hence economic) consequences of their unwanted presence in the environment, mostly in water. Phosphorus from fertilizers is lost through soil erosion and precipitation runoff and it is released in waste produced by domestic animals and people.[31] Because water (whether fresh or ocean) normally has very low concentrations of this element, its additions lead to eutrophication, the enrichment of waters with previously scarce nutrients that results in the excessive growth of algae.[32] Losses of nitrogen from fertilized farmland (and from animal and human waste) also cause eutrophication, but aquatic photosynthesis is more responsive to phosphorus additions.

Neither primary sewage treatment (sedimentation removes 5–10 percent of phosphorus) nor secondary removal (filtration captures 10–20 percent) prevents eutrophication, but phosphorus can be removed by using coagulating agents or by microbial processes, then turned into crystals and reused as fertilizer.[33]

As already explained, the worldwide efficiency of nitrogen uptake by crops has declined to less than 50 percent, and to below 40 percent in China and France. In conjunction with phosphorus, soluble nitrogen compounds contaminate waters and support excessive algal growth. Decomposing algae consume oxygen dissolved in seawater and create oxygen-less (anoxic) waters where fish and crustaceans cannot survive. These oxygen-depleted zones are prominent along the eastern and southern coasts of the United States and along coasts in Europe, China, and Japan.[34] There are no easy, inexpensive, and rapid solutions to these environmental impacts. Better agronomic management (crop rotations, split applications of fertilizers to minimize their losses) is essential, and reduced meat consumption would be the single-most important adjustment as it would lower the need for producing feed grains—but sub-Saharan Africa will need much more nitrogen and phosphorus if it is to avoid chronic dependence on food imports.

And any longer-term assessment of the three existential necessities—atmospheric oxygen, water availability, and food production—must consider how their provision could be affected by the unfolding process of climate change, a gradual transformation that will leave its mark on the biosphere in myriad ways: the impacts go far beyond higher temperatures and rising ocean levels, the two changes that are most often referenced by the media. I will not revisit a long list of predicted impacts, from broiling cities to rising oceans, from desiccated crops to melted

glaciers. That has been done, in measured ways as well as in hysterical fashion, too many times.

Instead, I will take a utilitarian—and unorthodox—approach. I will start by explaining the life-enabling necessity of the greenhouse gas effect, without which the Earth's surface would be permanently frozen and which we have, unintentionally, enhanced by a combination of actions—with the combustion of fossil fuels being the most important driver of anthropogenic global warming. Then I will explain how, contrary to a common perception, modern science identified this phenomenon more than a century ago, how we have ignored clearly stated potential risks for generations, how we have been, so far, unwilling to commit to any effective action to change the course of global warming—and how extraordinarily challenging such a shift would be.

Why the Earth is not permanently frozen

As we saw in the first chapter, the abundance of fossil fuels and their increasingly more efficient conversions have been the dominant energizers of modern economic growth, bringing us the benefits of greater longevity and richer lives—but also concerns about the long-term effects of CO_2 emissions on the global climate (commonly referred to as global warming). Simple physics explains our worries about the environmental consequences of planetary warming. We are concerned about too much of something without which we could not be alive: the greenhouse effect. This existential imperative is the regulation of the Earth's atmospheric temperature by a few trace gases—above all by carbon dioxide (CO_2) and methane (CH_4). Compared to the two gases that make the bulk of the atmosphere (nitrogen at 78 percent, oxygen at 21 percent), their presence is negligible (small fractions of a percent) but

their effect makes the difference between a lifeless, frozen planet and a blue and green Earth.[35]

The Earth's atmosphere absorbs the incoming (short-wave) solar radiation and radiates (longer waves) to space. Without it, the temperature of the Earth would be -18ºC, and hence our planet's surface would be perpetually frozen. Trace gases change the planet's radiation balance by absorbing some of the outgoing (infrared) radiation and raising the surface temperature. This allows for the existence of liquid water, whose evaporation puts water vapor (another gas that absorbs outgoing infrared, invisible waves) into the atmosphere. The overall result is that the Earth's surface temperature is 33ºC higher than it would be in the absence of trace gases and water vapor, and the global mean temperature of 15ºC supports life in its many forms.

Labeling this natural phenomenon as the "greenhouse effect" is a misleading analogy, because the heat inside a greenhouse is there not only because the glass enclosure prevents the escape of some infrared radiation but also because it cuts off air circulation. In contrast, the natural "greenhouse effect" is caused solely by the interception of a small share of outgoing infrared radiation by trace gases —while the global atmosphere remains in constant, unimpeded, and often violent motion. Water vapor is by far the most important absorber of outgoing radiation, and hence it is the gas that has been responsible for most of the atmospheric warming in the past and it will remain so in the future. Water vapor is the principal generator of the natural greenhouse effect—but water vapor is not the cause of atmospheric warming because it does not control atmospheric temperature. In fact, it is the other way around: the changing temperature determines how much water can be present as a gas (the humidity of air increases

with rising temperatures) and how much it condenses to liquid (condensation increases as the temperature drops).

The Earth's natural warming is controlled by trace gases whose concentration is not affected by the ambient temperature—that is, they do not condense and precipitate as temperatures decline. But the relatively small warming they cause increases evaporation and raises atmospheric water concentrations, and this feedback results in additional warming. The natural trace gas effect has always been dominated by carbon dioxide (CO_2), with smaller contributions made by methane (CH_4), nitrous oxide (N_2O), and ozone (O_3)—the latter known to many via the eponymous ozone layer. Human actions began to affect the concentrations of several trace gases—creating an additional, man-made (anthropogenic) greenhouse gas effect—thousands of years ago, as soon as settled societies adopted farming and began using wood (and the charcoal made from it) in households and when smelting metals and making bricks and tiles. The conversion of forests to cropland released additional CO_2, and cultivation of rice in flooded fields produced additional CH_4.[36]

But the impact of these anthropogenic emissions became significant only with the increasing pace of industrialization. Rising CO_2 emissions, which cause an accelerated anthropogenic greenhouse gas effect, have been driven primarily by the combustion of fossil fuels and by the production of cement. Methane emissions (from rice fields, landfills, cattle, and natural gas production) and nitrous oxide (originating mostly from the rising application of nitrogenous fertilizers) are the other notable anthropogenic sources of greenhouse gases. Reconstructions of their past atmospheric concentrations show the sudden increase brought on by industrialization.

For centuries before 1800, CO_2 levels fluctuated narrowly at close to 270 parts per million (ppm)—that is, 0.027 percent by volume. By 1900 they rose slightly to 290 ppm, a century later they were nearly 375 ppm, and in the summer of 2020 they rose above 420 ppm, more than a 50 percent increase above the late 18th-century level.[37] Preindustrial methane levels were three orders of magnitude lower—less than 800 parts per billion (ppb)—but they have more than doubled, to nearly 1,900 ppb by 2020, while nitrous oxide concentrations rose from about 270 ppb to more than 300 ppb.[38] These gases absorb the outgoing radiation to different degrees: when their impacts are compared over a 100-year period, releasing a unit of CH_4 has the same effect as releasing 28–36 units of CO_2; for N_2O, the multiplier is between 265 and 298. A handful of new man-made industrial gases—above all chlorofluorocarbons (CFCs, in the past used in refrigeration) and SF_6 (an excellent insulator used in electrical equipment)—exert a far stronger effect, but fortunately they are present only in minuscule concentrations and the production of CFCs was gradually outlawed by the 1987 Montreal Protocol.[39]

CO_2 (mostly emitted from fossil fuel combustion, with deforestation being another major source) accounts for about 75 percent of the anthropogenic warming effect, CH_4 for about 15 percent, and the rest is mostly N_2O.[40] The continued rise of greenhouse gas emissions will eventually lead to temperatures high enough to cause many negative environmental impacts, engendering considerable social and economic costs. Contrary to a widely held impression, this is not a recent conclusion arising from a better understanding provided by complex climate change models executed by supercomputers. We knew this not only long before the first models of global atmospheric circulation

(the precursors of all global warming simulations) were introduced during the late 1960s, but generations before the first electronic computers were even built.

Who discovered global warming?

If you check Google's Ngram Viewer for the appearance of "global warming," you will discover the virtual absence of the phrase before 1980 followed by a steep rise in frequency, quadrupling in the two years before 1990. The "discovery" of carbon dioxide–induced global warming by the media, public, and politicians came in 1988, spurred by America's warm summer and by the establishment of the Intergovernmental Panel on Climate Change (IPCC), by the UN's Environment Programme (UNEP), and by the World Meteorological Organization (WMO). This led to a still-rising tide of scientific papers, books, conferences, think tank studies, and reports prepared by governments and international organizations, including the IPCC's periodic state-of-the-art reviews.

By 2020, a Google search returned more than a billion items for "global warming" and "global climate change"—this frequency is an order of magnitude higher than those for such recently fashionable news items as "globalization" or "economic inequality," or for such existential challenges as "poverty" and "malnutrition." Moreover, almost since the very beginning of the media's interest in this complex process, the coverage of global warming has been replete with poorly communicated facts, dubious interpretations, and dire predictions, and over time it has definitely acquired a distinctly more hysterical, even outright apocalyptic, flavor.

Uninformed observers would have to conclude that these warnings of an unfolding global catastrophe reflect the very latest scientific findings based on a combination of

previously unavailable satellite observations and on the forecasts using complex global climate models whose execution has been made possible by the rise of computing power. But while our latest monitoring and modeling are certainly more advanced, there is nothing new either about our understanding of the greenhouse effect or about the consequences of steadily increasing emissions of greenhouse gases: in principle, we have been aware of them for more than 150 years, and in a clear and explicit manner for more than a century!

A few years before his death, Joseph Fourier (1768–1830), a French mathematician, was the first scientist to realize that the atmosphere absorbs some of the radiation emanating from the ground; and in 1856, Eunice Foote, an American scientist and inventor, was the first author to link (briefly but clearly) CO_2 with global warming.[41] Five years later, John Tyndall (1820–1893), an English physicist, explained that water vapor is the most important absorber of the outgoing radiation, which means that "every variation of this constituent must produce a change in climate"—and he added that "similar remarks would apply to the carbonic acid diffused through the air."[42] Concise but clear, when rephrased in modern parlance it says: increases in CO_2 concentration must produce rising atmospheric temperature.

That was in 1861, and before the end of the century Svante Arrhenius (1859–1927), a Swedish chemist and an early Nobelian, published the first calculations of increased global surface temperature arising from the eventual doubling of preindustrial atmospheric CO_2.[43] His paper also noted that global warming will be felt least in the tropics and most felt in the polar regions, and that it will reduce temperature differences between night and day. Both of these conclusions have been confirmed. The Arctic warms up faster, but the simplest explanation (with the

melting of snow and ice, the share of reflected radiation declines sharply, leading to higher warming) is only a part of a complex process that includes changes in clouds and water vapor and energy transport to the poles through large weather systems.[44] Nighttime temperatures are increasing faster than the daytime averages mainly because the boundary layer (the atmosphere just above the ground) is very thin—mere hundreds of meters—during the night, compared to several kilometers during the day, and hence it is more sensitive to warming.[45]

In 1908 Arrhenius provided a fairly accurate estimate of climate sensitivity, the measure of global warming arising from a doubling of atmospheric CO_2 level: "Any doubling of the percentage of carbon dioxide in the air would raise the temperature of the earth's surface by 4^{o}C."[46] In 1957, three decades before the sudden surge of interest in global warming, Roger Revelle, an American oceanographer, and Hans Suess, a physical chemist, appraised the process of mass-scale fossil fuel combustion in its correct evolutionary terms: "Thus human beings are now carrying out a large scale geophysical experiment of a kind that could not have happened in the past nor be reproduced in the future. Within a few centuries we are returning to the atmosphere and oceans the concentrated organic carbon stored in sedimentary rocks over hundreds of millions of years."[47]

I cannot imagine what other phrasing could have better conveyed the unprecedented nature of this new reality. Just a year later, in response to this concern, the measurement of background CO_2 concentrations began at Mauna Loa in Hawai'i and at the South Pole, and they immediately showed constant and fairly predictable annual increases, from 315 ppm in 1958 to 346 ppm by 1985.[48] And in 1979, a report by the National Research Council put the theoretical value of climate sensitivity (including water vapor feedback) at 1.5ºC–4.5ºC, which means that the

estimate offered by Arrhenius in 1908 was well within that range.[49]

The late-1980s “discovery” of carbon dioxide–induced global warming thus came more than a century after Foote and Tyndall made the link clear, nearly four generations after Arrhenius published a good quantitative estimate of the possible global warming effect, more than a generation after Revelle and Suess warned about an unprecedented and unrepeatable planet-wide geophysical experiment, and a decade after modern confirmation of climate sensitivity. Clearly, we did not have to wait for new computer models or for the establishment of an international bureaucracy to be aware of this change and to think about our responses.

How little fundamental difference these efforts have made is perhaps best illustrated by the latest estimates of a key global warming metric, climate sensitivity. The IPCC’s fifth assessment report, published more than a century after Arrhenius offered the value of 4ºC, concluded that it is extremely unlikely that the sensitivity is less than 1ºC and very unlikely that it is above 6ºC, with the likely range between 1.5ºC and 4.5ºC, the same as the 1979 National Research Council report.[50] And in 2019, a comprehensive assessment of Earth’s climate sensitivity (using multiple lines of evidence) narrowed the most likely response to between 2.6ºC and 3.9ºC.[51] This means that climate sensitivity is extremely unlikely to be so low that it could prevent substantial warming (in excess of 2ºC) by the time the atmospheric CO_2 concentration rises to about 560 ppm, twice the preindustrial level.

And yet, so far, the only effective, substantial moves toward decarbonization have not come from any determined, deliberate, targeted policies. Rather, they have been by-products of general technical advances (higher conversion efficiencies, more nuclear and hydro generation, less wasteful processing and manufacturing

procedures) and of ongoing production and management shifts (switching from coal to natural gas; more common, less energy-intensive, material recycling) whose initiation and progress had nothing to do with any quest for reduced greenhouse gas emissions.[52] And, as already noted, the global impact of the recent turn toward decarbonizing electricity generation—by installing solar PV panels and wind turbines—has been completely negated by the rapid rise of greenhouse gas emissions in China and elsewhere in Asia.

Oxygen, water, and food in a warmer world

We know where we stand. Because of the rising concentrations of greenhouse gases, the planet has been, for generations, re-radiating slightly less energy that it has been receiving from the Sun. By 2020, the net value of this difference was about 2 watts per square meter compared to the 1850 baseline.[53] Because oceans have an enormous capacity to absorb atmospheric heat, it takes a long time to raise the average temperature of the lower atmosphere by an appreciable margin. During the late 2010s, after a couple of centuries of accelerated burning of fossil fuels, the temperature averaged across global land and ocean surfaces was almost 1ºC above the 20th-century mean. It has been documented on all continents, but it has not been evenly distributed: as Arrhenius rightly predicted, higher latitudes have seen much higher average increases than the mid-latitudes or the tropics.

In terms of the global average, the five warmest years in the past 140 years have happened since 2015, and 9 of the 10 warmest years have been experienced since 2005.[54] There have been many consequences of this global change, ranging from the earlier flowering of Kyoto’s cherry trees and earlier vintages of French wines to worrisome new

temperature records during summer heat waves and the melting of high-mountain glaciers.[55] And (not surprisingly, given the ease of playing with many computer models) there is now an even more extensive literature predicting what is to come. So, circling back to the three existential fundamentals, what is the outlook for oxygen, water, and food supply on a warmer Earth?

Oxygen's atmospheric concentration is not affected by any slight greenhouse gas–driven changes in temperature, but it has been marginally declining because of the principal anthropogenic cause of global warming: the burning of fossil fuels. Their combustion has recently been removing about 27 billion tons of oxygen a year from the atmosphere.[56] Net annual decline of atmospheric oxygen (also taking into account its losses due to wildfires and livestock respiration) was put at about 21 billion tons at the beginning of the 21st century—that is, less than 0.002 percent of the existing concentration a year.[57] Direct measurements of atmospheric O_2 concentrations confirm these tiny losses: recently they have been about 4 ppm, and as there are nearly 210,000 oxygen molecules among every 1 million molecules of air, this translates to an annual decline of 0.002 percent.[58]

At this rate it would take 1,500 years (roughly equal to the time that has elapsed since the demise of the Western Roman Empire) to lower oxygen's atmospheric level by 3 percent—but in terms of actual O_2 concentrations, that is merely the equivalent of moving from New York City (at sea level) to Salt Lake City (1,288 meters above sea level). Another extreme—and completely theoretical—calculation shows that, even should we burn all of the world's known reserves of all fossil fuels (coal, crude oil, and natural gas: an impossibility due to the prohibitive costs of extracting these fuels from mostly marginal deposits), atmospheric O_2 concentration would be reduced by just 0.25 percent.[59]

Unfortunately, for hundreds of millions of people, breathing is made difficult for many reasons—ranging from pollen allergens to outdoor urban and indoor (from cooking) rural air pollution—but there is no risk of impaired breathing caused by any conceivable decline of atmospheric oxygen consumed by forest fires or by fossil fuel combustion. Moreover, no access to a vital natural resource is so equitable: whatever the local level of air pollutants, at the same altitude anywhere in the world an identical concentration of oxygen is freely available to anybody, and populations living at high altitudes, in places like Tibet and the Andes, have shown many remarkable adaptations (above all, elevated hemoglobin concentrations) to lower oxygen concentrations.[60]

All that is to say, we should not worry about oxygen. However, we must be concerned about the future of the water supply. Many regional, national, and global models have examined future water availability. They assume different degrees of global warming, and while the worst-case scenarios offer a generally deteriorating outlook, there are substantial uncertainties depending on necessary assumptions about population growth and therefore water demand. With a warming of up to 2ºC, populations exposed to increased, climate change–induced water scarcity may be as low as 500 million and as high as 3.1 billion.[61] Per capita water supply will be decreasing worldwide, but some major river basins (including La Plata, the Mississippi, Danube, and Ganges) will remain well above the scarcity level, while some already water-scarce river basins will see further deterioration (perhaps most notably Turkey and Iraq's Tigris-Euphrates and China's Huang He).[62]

But most studies concur that demand-driven freshwater scarcity will have a much greater impact than the shortages induced by climate change. As a result, our best option for dealing with future water supply is to manage

demand, and one of the best large-scale examples of this working is the recent history of the US's reducing per capita water usage.[63] In 2015, overall US water consumption was less than 4 percent higher than it was in 1965—but during the intervening 50 years the country's population increased by 68 percent, its GDP (in constant monies) more than quadrupled, and irrigated farmland increased by about 40 percent. This means that average per capita water use decreased by nearly 40 percent, that the water intensity of the US economy (units of water per unit of constant GDP) declined by 76 percent, and, as the total volume of water used for irrigation was actually slightly lower in 2015, that applications per unit of farmland declined by nearly a third. There are, of course, physical limits to the further reduction in all of these uses of water, but the US experience shows that the gains can go far beyond marginal ones.

The shortage of drinking water can be alleviated by desalination—the removal of dissolved salts from seawater by techniques ranging from solar distillation to the use of semipermeable membranes. This option has become more common in many water-short countries (there are some 18,000 desalination plants around the world) but the costs are well above those of freshwater supplied from reservoirs or from recycling.[64] The volumes of water needed for crops are of a much higher magnitude, and most of the world's food production will continue to depend on rainfall. Will there be enough of it in the coming warmer world?

Photosynthesis is always an extremely lopsided exchange of internal water (inside a leaf) for external CO_2 (in the atmosphere). Anytime a plant opens its stomata (located on the underside of leaves) to import sufficient carbon for its photosynthesis, it loses large amounts of water. For example, transpiration efficiency (biomass produced per unit of water used) of wheat (whole plant) is 5.6–7.5 grams

per kilogram, and this translates to about 240–330 kilograms of water per kilogram of harvested grain.[65]

Global warming will, inevitably, intensify the water cycle because higher temperatures will increase evaporation. As a result, there will be, overall, more precipitation and hence more water available for capture, storage, and use.[66] But more precipitation in general will not mean more precipitation everywhere, nor—a no less important consideration—more precipitation when it is most needed. As with many other changes associated with a warmer climate, enhanced precipitation will be unevenly distributed. Some regions will be receiving less than today; others (including the Yangtze basin, home to most of China's large population) significantly more, and this increase is expected to bring a slight reduction in the number of people residing in highly water-stressed environments.[67] But many places with more precipitation will get it in a more irregular manner, in the form of less frequent but heavier—even catastrophic—rain or snow events.

A warmer atmosphere will also enhance water loss from plants (evapotranspiration), but that does not mean that crops and forests will wilt as they lose water. A rising atmospheric level of CO_2 means that the water required per unit of yield will decrease in a warmer and CO_2-richer biosphere. This effect has already been measured in some crops, and wheat and rice (staple grains which rely on the most common photosynthetic pathway) will increase their water use efficiency more than corn or sugar cane (which use a less common, but inherently more efficient, pathway).[68] This means that, in some regions, wheat and other crops could yield as much or more than today, even if the precipitation they receive is reduced by 10–20 percent.

At the same time, global food production is also a significant source of trace gases that contribute to global

warming, mostly CO_2 from conversions of forests and pastures to fields (still ongoing above all in South America and Africa), and methane emissions from ruminant livestock.[69] But this reality also presents opportunities for improvements and adjustments. Crops could be grown in ways that increase organic matter in soils and hence their carbon storage (by reducing or eliminating annual plowing), and methane emissions from livestock could be lowered by eating less beef. My calculations show that in the future—by lowering the share of beef and raising the share of pork, chicken meat, eggs, and dairy products, by more efficient feeding, and by better use of crop residues and food processing by-products—we could match recent global meat output while greatly limiting livestock's environmental impact, including its share of methane emissions.[70]

More broadly, a recent study asked if it is possible to feed the future population of 10 billion people (expected shortly after 2050) within four terrestrial planetary boundaries—in other words, doing so without taking the Earth and its inhabitants to the brink in terms of transgressing the limits on the biosphere's integrity, land and freshwater use, and nitrogen flow. Not surprisingly, the study concluded that if all of those boundaries were strictly respected, the global food system could supply balanced daily diets (about 2,400 kilocalories per capita) to no more than 3.4 billion people—but that 10.2 billion could be supported with the redistribution of cropland, better water and nutrient management, food waste reduction, and dietary adjustments.[71]

Informed looks at the three existential necessities of life—breathing, drinking, and eating—concur: there should be no unavoidable apocalypse by 2030 or 2050. Oxygen will remain abundant. Concerns about water supply will increase in many regions, but we have the knowledge and

we should be able to mobilize the means needed to avert any mass-scale life-threatening shortages. And we should not only maintain but improve average per capita food supply in low-income countries, while reducing excessive production in affluent nations. However, these actions would only reduce, not eliminate, our reliance on direct and indirect fossil fuel subsidies in the production of food for the global population (see chapter 2). And, as I explained in the first chapter, moving away from fossil fuels cannot be done rapidly. This means that, for decades to come, their combustion will remain the principal driver of global climate change. How will this affect the long-term trend of global warming?

Uncertainties, promises, and realities

The combination of scientific advances and improving technical capabilities means that we now approach any complex process that involves the intricate interplay of natural factors and human actions with the advantages of considerable, and steadily expanding, understanding. At the same time, we also have to reckon with uncomfortable degrees of ignorance, and with persistent uncertainties that make any resolute response so much more difficult. If a reminder of this fundamental reality was needed, then the spread and the consequences of COVID-19 provided many sobering global lessons.

We were unprepared—to a degree even those of us who expected major problems found surprising—for an event whose near-imminent occurrence could have been forecast with 100 percent certainty: in 2008 I did so unequivocally in my book on global catastrophes and trends, getting even the timing right.[72] Although we almost immediately identified the full genetic makeup of this new pathogen, national public policy responses to its spread ranged from

largely business as usual (Sweden) to draconian (but belated) countrywide shutdowns (Italy, Spain), and from early dismissals (the US in February 2020) to early successes that turned into later problems (Singapore).[73]

And yet, fundamentally, this is a self-limiting natural phenomenon that we have experienced on a global scale three times since the late 1950s: even without any vaccines, every viral pandemic eventually subsides once the pathogen infects relatively large numbers of people or once it mutates into a less virulent form. In contrast, global climate change is an extraordinarily complex development whose eventual outcome depends on far-from-perfectly understood interactions of many natural and anthropogenic processes. As a result, we will need, for decades to come, more observations, more studies, and far better climate models in order to get more accurate appraisals of long-term trends and of the most likely outcomes.

To believe that our understanding of these dynamic, multifactorial realities has reached the state of perfection is to mistake the science of global warming for the religion of climate change. At the same time, we do not need an endless stream of new models in order to take effective actions. There are enormous opportunities for reducing energy use in buildings, transportation, industry, and agriculture, and we should have initiated some of these energy-saving and emissions-reducing measures decades ago, regardless of any concerns about global warming. Quests to avoid unnecessary energy use, to reduce air pollution and water, and to provide more comfortable living conditions should be perennial imperatives, not sudden desperate actions aimed at preventing a catastrophe.

Most remarkably, we have largely ignored taking steps that could have limited the long-term impacts of climate change and that should have been taken even in the absence of any global warming concerns because they

bring long-term savings and provide more comfort. And as if that were not enough, we have deliberately introduced and promoted the diffusion of new energy conversions that have boosted the consumption of fossil energies and hence further intensified CO_2 emissions. The best examples of these omissions and commissions are the indefensibly inadequate building codes in cold-climate countries and the worldwide adoption of SUVs.

Because our houses are around for a long time (a well-built, properly maintained wood-frame North American house with a concrete foundation can last for more than 100 years), with proper wall insulation, triple window panes, and highly efficient heating furnaces they represent a unique opportunity for long-lasting energy (and hence carbon emissions) savings.[74] In 1973, when OPEC quintupled the world price of crude oil, most buildings in Europe, North America, and North China had just single-pane windows; in Canada triple panes will not be mandated before 2030, and Manitoba was the first province to require high-efficiency (>90 percent) natural gas–fired furnaces in 2009, decades after such options became commercially available.[75] Would it not be interesting to know how many delegates to global warming meetings coming from cold climates have triple panes filled with inert gas, super-insulated walls, and 97 percent–efficient gas furnaces? Analogically, how many people in hot climates have properly sealed rooms so that their poorly installed and inefficient window air conditioners don't waste cool air?

SUV ownership began to rise in the US during the late 1980s, it eventually diffused globally, and by 2020 the average SUV emitted annually about 25 percent more CO_2 than a standard car.[76] Multiply that by the 250 million SUVs on the road in 2020, and you will see how the worldwide embrace of these machines has wiped out, several times over, any decarbonization gains resulting

from the slowly spreading ownership (just 10 million in 2020) of electric vehicles. During the 2010s, SUVs became the second-highest cause of rising CO_2 emissions, behind electricity generation and ahead of heavy industry, trucking, and aviation. If their mass public embrace continues, they have the potential to offset any carbon savings from the more than 100 million electric vehicles that might be on the road by 2040!

The second chapter of this book detailed the high energy cost of modern food production and noted indefensibly high levels of food waste: clearly, this combination presents many opportunities for reducing not only CO_2 emissions but also CH_4 emissions from rice cultivation and ruminant livestock and N_2O emissions from the excessive application of nitrogen fertilizer—as well as the emissions from questionable food trade. Is it necessary to airlift blueberries from Peru to Canada in January, and green beans from Kenya to London? The vitamin C and roughage these foodstuffs provide can be secured from many other sources with much lower carbon footprints. And could not we, with our immense data-processing capabilities, price food better and more flexibly in order to make a major dent in the 30–40 percent waste rate? Why not do what can be done, profitably and immediately, rather than waiting for more modeling exercises?

The list of what we have not—but could have—done is long. And what have we done to avert, or to reverse, the unfolding environmental change in the three decades since global warming became a dominant topic of modern discourse? The data are clear: between 1989 and 2019 we increased global anthropogenic greenhouse gas emissions by about 65 percent. Even when we deconstruct this global mean, we see that affluent countries like the US, Canada, Japan, Australia, and those in the EU, whose per capita energy use was very high three decades ago, did reduce

their emissions, but only by about 4 percent, while Indian emissions quadrupled and Chinese emissions rose 4.5 times.[77]

The combination of our inaction and of the extraordinarily difficult nature of the global warming challenge is best illustrated by the fact that three decades of large-scale international climate conferences have had no effect on the course of global CO_2 emissions. The UN's first conference on climate change took place in 1992; annual climate change conferences began in 1995 (in Berlin) and included much publicized gatherings in Kyoto (1997, with its completely ineffective agreement), Marrakech (2001), Bali (2007), Cancún (2010), Lima (2014), and Paris (2015).[78] Clearly, the delegates love to travel to scenic destinations with hardly any thought of the dreaded carbon footprint generated by this global jetting.[79]

In 2015, when about 50,000 people flew to Paris in order to attend yet another conference of the parties at which they were to strike, we were assured, a "landmark"—and also "ambitious" and "unprecedented"—agreement, and yet the Paris accord did not (could not) codify any specific reduction targets by the world's largest emitters, and it would, even if all voluntary non-binding pledges were honored (something utterly improbable), result in a 50 percent *increase* of emissions by 2050.[80] Some landmark.

These meetings could never have stopped either the expansion of China's coal extraction (it more than tripled between 1995 and 2019, to nearly as much as the rest of the world combined) or the just-noted worldwide preference for massive SUVs, and they could not have dissuaded millions of families from purchasing—as soon as their rising incomes allowed—new air conditioners that will work through the hot humid nights of monsoonal Asia and hence will not be energized by solar electricity anytime soon.[81] The combined effect of these demands: between

1992 and 2019, the global emissions of CO_2 rose by about 65 percent; those of CH_4 by about 25 percent.[82]

What can we do during the coming decades? We must start with the recognition of fundamental realities. We used to consider a 2ºC increase in average global temperature as a relatively tolerable maximum, but in 2018 the IPCC lowered that to just 1.5ºC—but by 2020 we have already added two-thirds of that maximum preferable temperature rise. Moreover, in 2017 an assessment that considered the capacity of the oceans to absorb carbon, the planet's energy imbalances, and the behavior of fine particles in the atmosphere concluded that the committed global warming (arising from past emissions and becoming a reality even if all new emissions ceased instantly) had already added up to 1.3ºC and hence it would require only an additional 15 years of new emissions to surpass 1.5ºC.[83] The latest analysis of these combined effects concluded that we are already committed to global warming of 2.3ºC.[84]

As always, these conclusions have their own margins of error, but it seems highly likely that the proverbial horse of 1.5ºC warming has already bolted. Even so, many institutions, organizations, and governments are still theorizing about keeping it inside the broken corral. The IPCC report on 1.5ºC warming offers a scenario based on such a sudden and persistent reversal of our reliance on fossil fuels that the global emissions of CO_2 would be halved by 2030 and eliminated by 2050[85] —and other scenario-builders are now offering detailed suggestions on how to achieve a rapid end to the fossil carbon era. Computers make it easy to construct many scenarios of rapid carbon elimination—but those who chart their preferred paths to a zero-carbon future owe us realistic explanations, not just sets of more or less arbitrary and highly improbable assumptions detached from technical and economic realities and ignoring the embedded nature,

massive scale, and enormous complexity of our energy and material systems. Three recent exercises provide excellent illustrations of these flights of fancy unencumbered by real-world considerations.

Wishful thinking

The first scenario, prepared mostly by EU researchers, assumes that average global per capita energy demand in 2050 will be 52 percent lower than it was in 2020. Such a drop would make it easy to keep the global temperature rise below 1.5ºC (that is, if we still believe that such a thing is possible).[86] Of course—and as I will reiterate in the final chapter—when constructing long-range scenarios, we can plug in any arbitrary assumptions in order to meet preconceived outcomes. But how do the assumptions of this scenario align with the recent past?

Cutting per capita energy demand by half in three decades would be an astonishing accomplishment given the fact that over the previous 30 years global per capita energy demand rose by 20 percent. The projection assumes that the much lower demand for energy will arise from a combination of moving away from owning goods, the digitalization of daily life, and a rapid diffusion of technical innovations in converting and storing energies.

The suggested first driver of disappearing demand (owning less) is an academic belief for which there is very little evidence, as all major categories of personal consumption—measured by annual household expenditures—have been rising even in affluent countries. In already highly saturated markets with already congested traffic, the EU's car ownership per 1,000 people rose by 13 percent between 2005 and 2017, and during the past 25 years it was up about 25 percent in Germany and 20 percent in France.[87] Reduced demand and gradual

declines in ownership are desirable and likely; halving the demand is an arbitrary and unlikely target.

More importantly, the proponents of this unrealistic scenario allow merely a factor-of-two increase across all modes of mobility during the next three decades in what they call the Global South (a common but highly inaccurate designation of low-income nations, mostly in Asia and Africa), and a factor-of-three increase in the ownership of consumer goods. But in the China of the past generation, growth has been on an entirely different scale: in 1999 the country had just 0.34 cars per 100 urban households, in 2019 the number surpassed 40. That is a more than 100-fold relative increase in only two decades.[88] In 1990, 1 out of every 300 urban households had an air-conditioning window unit; by 2018 there were 142.2 units per 100 households: a more than 400-fold rise in less than three decades. Consequently, even if those countries whose standard of living is today where China's was in 1999 were to achieve only a tenth of China's recent growth, they would experience a 10-fold increase of car ownership and a 40-fold increase in air conditioners. Why do the prescribers of the low-energy-demand scenario think that today's Indians and Nigerians do not want to narrow the gap that separates them from China's material ownership?

Not surprisingly, the latest global production gap report —an annual publication highlighting the discrepancy between fossil fuel production planned by individual countries and the global emission levels necessary to limit warming to 1.5ºC or 2ºC—does not show any commitments to plunging trend lines; just the opposite, in fact.[89] In 2019, the major consumers of fossil energies were aiming to produce 120 percent more fuels by 2030 than would be consistent with limiting global warming to 1.5ºC, and whatever the eventual effect of the COVID-19 pandemic,

the resulting decline of consumption will be both temporary and too small to reverse the general trend.

In the second scenario conforming to the goal of complete decarbonization by 2050, a large group of energy researchers at Princeton University have charted the required shifts in the US.[90] The Princeton scenario-builders recognize that it will be impossible to eliminate all fossil fuel consumption and that the only way to achieve net-zero emissions is to resort to what they label the "fourth pillar" of their overall strategy—to mass-scale carbon capture and storage of emitted CO_2—and their calculation requires the removal of 1–1.7 gigatons of the gas per year. When compared on a volume equivalent basis, that would necessitate the creation of an entirely new gas-capture-transportation-storage industry that every year would have to handle 1.3–2.4 times the volume of current US crude oil production, an industry that took more than 160 years and trillions of dollars to build.

The majority of this carbon storage is to take place along the Texas Gulf Coast, and this would require building about 110,000 kilometers of new CO_2 pipelines, necessitating an utterly unprecedented speed in the planning, permitting, and constructing of such extensive links in a society famous for its litigiousness and NIMBY resistance.[91] At the same time, additional monies would have to be spent on dismantling the existing transmission infrastructure of the US oil and gas industry. Given the rich historical experience with massive long-term cost overruns, any cost estimates for expenditure over the next three decades cannot be trusted even as far as their order of magnitude is concerned.

Achieving complete decarbonization by 2050 is a tame goal compared to the third scenario, which extends the goals of the US Green New Deal (introduced in the US Congress in 2019) to 143 countries and outlines how at

least 80 percent of global energy supply will be decarbonized by 2030 thanks to renewable wind, water, and solar (WWS) energy, the supply of which will reduce overall needs by 57 percent, financial costs by 61 percent, and social (health and climate) costs by 91 percent: "Thus, 100 percent WWS needs less energy, costs less, and creates more jobs than current energy."[92] There is no shortage of media, celebrities, and bestselling authors repeating, supporting, and amplifying these claims, ranging (no surprise) from *Rolling Stone* to the *New Yorker*, and from Noam Chomsky (who adds energy as his latest field of expertise) to Jeremy Rifkin, who believes that without such an intervention our fossil-fueled civilization will collapse by 2028.[93]

If true, these claims and their enthusiastic endorsements raise the obvious question: why should we worry about global warming? Why be frightened by the idea of early planetary demise, why feel compelled to join Extinction Rebellion? Who could be against solutions that are both cheap and nearly instantly effective, that will create countless well-paying jobs and ensure care-free futures for coming generations? Let us all just sing from these green hymnals, let us follow all-renewable prescriptions and a new global nirvana will arrive in just a decade—or, if things get a bit delayed, by 2035.[94]

Alas, a close reading reveals that these magic prescriptions give no explanation for how the four material pillars of modern civilization (cement, steel, plastic, and ammonia) will be produced solely with renewable electricity, nor do they convincingly explain how flying, shipping, and trucking (to which we owe our modern economic globalization) could become 80 percent carbon-free by 2030; they merely assert that it could be so. Attentive readers will remember (see chapter 1) that during the first two decades of the 21st century Germany's

unprecedented quest for decarbonization (based on wind and solar) succeeded in boosting the shares of wind- and solar-generated electricity to more than 40 percent, but it lowered the share of fossil fuels in the country's primary energy use only from about 84 percent to 78 percent.

What miraculous options will be available to African nations now relying on fossil fuels to supply 90 percent of their primary energy, in order to drive their dependence to 20 percent within a decade while also saving enormous sums of monies? And how will China and India (both countries are still expanding their coal extraction and coal-fired generation) suddenly become coal-free? But these specific critiques of published rapid-speed transformation narratives are really beside the point: it makes no sense to argue with the details of what are essentially the academic equivalents of science fiction. They start with arbitrarily set goals (zero by 2030 or by 2050) and work backwards to plug in assumed actions to fit those achievements, with actual socioeconomic needs and technical imperatives being of little, or no, concern.

Reality thus presses in from both ends. The sheer scale, cost, and technical inertia of carbon-dependent activities make it impossible to eliminate all of these uses in just a few decades. As I detailed in the chapter on energy, we cannot sever that dependence so rapidly, and every realistic long-term forecast concurs: most notably, even the IEA's most aggressive decarbonization scenario has fossil fuels supplying 56 percent of the global primary energy demand by 2040. Similarly, the enormous scale and cost of material and energy demands make it impossible to resort to direct air capture as a decisive component of rapid global decarbonization.

But we can make a great deal of difference, not by pretending to follow unrealistic and arbitrary goals: all too obviously, history does not unfold as a computerized academic exercise with major achievements falling on

years ending with zero or five; it is full of discontinuities, reversals, and unpredictable departures. We can proceed fairly fast with the displacement of coal-fired electricity by natural gas (when produced and transported without significant methane leakage, it has a substantially lower carbon intensity than coal) and by expanding solar and wind electricity generation. We can move away from SUVs and accelerate mass-scale deployment of electric cars, and we still have large inefficiencies in construction, household, and commercial energy use that can be profitably reduced or eliminated. But we cannot instantly change the course of a complex system consisting of more than 10 billion tons of fossil carbon and converting energies at a rate of more than 17 terawatts, just because somebody decides that the global consumption curve will suddenly reverse its centuries-long ascent and go immediately into a sustained and relatively fast decline.

Models, doubts, and realities

Why is it that some scientists keep on charting such arbitrarily bending and plunging curves leading to near-instant decarbonization? And why are others promising the early arrival of technical super-fixes that will support high standards of living for all humanity? And why are these wishful offerings taken so often for reliable previsions and are readily believed by people who would never try to question their assumptions? I will have more to say about this in the closing chapter, but here are some observations related to the now-so-dominant concern of global environmental change.

De omnibus dubitandum (Doubt everything) must be more than a durable Cartesian quote; it must remain the very foundation of the scientific method. Recall how I opened this chapter with a list of nine planetary boundaries

whose transgressions imperil our biospheric wellbeing? Keeping them within safe confines seems to be an obvious conclusion because they identify the most important, perennial, existential concerns—and yet a list prepared 40 years ago would have been very different. Acid rain (or, more correctly, acidifying precipitation) would have been, most likely, its top item, because a broad consensus of the early 1980s saw it as the leading environmental problem.[95]

Stratospheric ozone depletion would have been absent because the infamous Antarctic ozone hole was discovered only in 1985; and, if listed at all, anthropogenic climate change and associated ocean acidification would have been near the bottom.[96] And even when focusing on such perennial concerns as land use changes (dominated by deforestation), loss of biodiversity (from iconic pandas and koalas to bee colonies and sharks), and freshwater supply, our concerns have evolved considerably, becoming more acute in some ways (we now worry more about withdrawals of underground water and about excessive nutrients creating coastal dead zones) and less pressing in others (perhaps most notably, forests have made substantial comebacks, not only in all affluent countries but also in China).[97]

When looking ahead, we must regain a critical perspective when dealing with all models exploring environmental, technical, and social complexities. There are no limits to assembling such models or, as fashionable lingo has it, constructing narratives. Their authors can choose, as so many recent climate models have done recently, excessive assumptions about future energy use, and they can end up with very high rates of warming that generate news headlines about hellish futures.[98] Taking the opposite approach, other modelers can posit 100 percent inexpensive thermonuclear electricity or cold fusion by 2050, or, alternatively, they can allow for the

unlimited expansion of fossil fuel combustion, because their model deploys miraculous techniques that will not only remove any volume of CO_2 from the atmosphere but recycle it as a feedstock for synthesizing liquid fuel—all at a steadily declining cost.

Of course, they just march along with the new tech crowd whose naivete compares every technical change to recent developments in electronics, and above all to mobile phones. Here is how a green energy CEO put it in 2020: "Do you remember how we transformed telephony from fixed-line phones to mobile phones, television from watching whatever was on TV to whatever we fancied, from buying newspapers to customising our news feeds? The people-led, tech-powered energy revolution is going to be just the same."[99] How could changing a device (landline to mobile) whose reliable use depends on a massive, complex, and highly reliable system of electricity generation (dominated by thousands of large fossil-fueled, hydro, and nuclear power plants), transformation, and transmission (encompassing hundreds of thousands of kilometers of national and even continental-scale grids) be the same as changing the entire underlying system?

Much of this unmoored thinking comes out as intended—ranging from scary to wonderful—and I can see why many people are taken in either by these threats or by unrealistic suggestions. Only the imagination limits these assumptions: they range from fairly plausible to patently delusionary. This is a new scientific genre where heavy doses of wishful thinking are commingled with a few solid facts. All of these models should be seen mainly as heuristic exercises, as bases for thinking about options and approaches, never to be mistaken for prescient descriptions of our future. I wish this admonition would be as obvious, as trivial, and as superfluous as it seems!

Regardless of the perceived (or modeled) severity of global environmental challenges, there are no swift, universal, and widely affordable solutions to tropical deforestation or biodiversity loss, to soil erosion or to global warming. But global warming presents an uncommonly difficult challenge precisely because it is a truly global phenomenon, and because its largest anthropogenic cause is the combustion of fuels that constitute the massive energetic foundations of modern civilization. As a result, non-carbon energies could completely displace fossil carbon in a matter of one to three decades ONLY if we were willing to take substantial cuts to the standard of living in all affluent countries and deny the modernizing nations of Asia and Africa improvements in their collective lots by even a fraction of what China has done since 1980.

Still, major reductions in carbon emissions—resulting from the combination of continued efficiency gains, better system designs, and moderated consumption—are possible, and a determined pursuit of these goals would limit the eventual rate of global warming. But we cannot know to what extent we will succeed by 2050, and thinking about 2100 is truly beyond our ken. We can outline extreme cases, but in just a few decades the fan of possible outcomes becomes too wide and, in any case, the progress of any eventual decarbonization is contingent not only on our deliberate remedial actions but also on unpredictable intervening changes in national fortunes.

Was there a single climate modeler who predicted in 1980 the most important anthropogenic factor driving global warming over the past 30 years: the economic rise of China? At that time even the best models, all being direct descendants of global atmospheric circulation models developed during the 1960s, had no way of reflecting unpredictable shifts in national fortunes, and they also ignored the interactions between the atmosphere and the

biosphere. That did not make these models useless: they assumed the continued global growth of greenhouse gas emissions and, in general, they were fairly accurate in predicting the rate of global warming.[100]

But a good estimate of the overall rate is only the beginning. To use, once again, the COVID-19 analogy, this is akin to making a forecast in 2010 that—based on the last three pandemics and adjusted for a larger population—global deaths during the first year of the next global pandemic would be about 2 million.[101] That would be very close to the actual total—but would that forecast (correctly assuming, based on many precedents, that the pandemic would start in China) also assign only 0.24 percent of those deaths (in absolute terms, less than in Greece or Austria) to China, a country with nearly 20 percent of the global population—and nearly 20 percent to the US, a far richer and (it certainly believes this about itself) far more competent country with less than 5 percent of the global population?

And, even more incredibly, would it predict that the highest mortalities would be concentrated in the most affluent Western economies, those that boast about their state-delivered advanced health care? In March 2021, as the pandemic entered officially its second year (the WHO proclaimed it on March 11, 2020, although the infection had been spreading in China at least since December 2019), all the top 10 countries with the highest cumulative mortalities (above 1,500 per million; or 1.5 out of every 1,000 people died of COVID-19) were in Europe, including six EU members and the UK. And who could predict that the US rate (also above 1,500) would be two orders of magnitude above China's 3 deaths per 1 million?[102] Obviously, even a highly accurate forecast of total interim COVID-19 mortality would provide no specific guidance for formulating the best national responses.

Analogically, the post-1980 rise of China (as well as India) has changed the circumstances of any response to rising global trace gas emissions. In 1980, four years after Mao Zedong's death, China's per capita economic product was less than one-quarter of the Nigerian mean; there were no private passenger cars; only the top Communist Party leaders living in the seclusion of Zhongnanhai (the former imperial garden within the Forbidden City, now the central headquarters of the Communist Party) had air conditioning; and China produced just 10 percent of global CO_2 emissions.[103]

By 2019 China was, in terms of purchasing power, the world's largest economy; its per capita GDP was five times the Nigerian mean; the country was the world's largest producer of cars; half of all urban households had two window-mounted air-conditioning units; the length of its rapid train network surpassed the combined length of all the EU's links; and about 150 million of its citizens had traveled overseas. The country also emitted 30 percent of the world's CO_2 from fossil fuels. In contrast, the combined emissions of the USA and EU28 fell from 60 percent of the world total in 1980 to 23 percent by 2019 and (because of slow rates of economic growth; aging, even declining, populations; and large-scale offshoring of industrial production to Asia) their combined share is highly unlikely to rise ever again.

Looking ahead, most of the power to enact meaningful change will lie more and more in the modernizing economies of Asia: excluding high-income and low- or no-population growth Japan, South Korea, and Taiwan, the continent is now producing half of all emissions. And while the unfolding transformation of sub-Saharan Africa has been much slower, its combined population of about 1.1 billion will nearly double during the next 30 years, it will contain almost 50 percent more people than China (the

country that all low-income economies wish to emulate), and a critical assessment of the continent's electricity future points to a high-carbon lock-in, with fossil-fueled generation dominant and with the share of non-hydro renewables remaining below 10 percent in 2030.[104]

The rise and fall of nations is not the only uncertainty concerning the progress and effects of global warming. Recent good news is that the world's forests have been a large and persistent carbon sink (storing more than they emit), locking away about 2.4 billion tons of carbon every year between 1990 and 2007, and satellite data for 2000–2017 indicate that one-third of the world's vegetated area has been greening (showing a significant increase in the average annual green leaf area, confirming that more carbon is now absorbed and stored) and only 5 percent has been browning (showing significant loss of leaves).[105] This effect has been particularly notable in intensively cultivated croplands in China and India, and in China the effect has also been seen in the country's expanding forests.

But the not-so-good news (you knew it was coming …) is that between 1900 and 2015 the biosphere lost 14 percent of its trees due to cutting and, no less significantly, tree mortality doubled during that time, with older (and taller) trees accounting for a larger share of this loss. The world's forests are getting younger and shorter, and hence are not able to store as much carbon as in the past.[106] Increased growth rates appear to be shortening trees' lifespans across almost all species and climates, and so the existence of substantial carbon sinks may be only transient.[107] And how many times have you heard that, inevitably, the first places to succumb to rising sea levels caused by global warming will be the low-lying coasts in general and island nations in the Pacific in particular?[108] And yet a recent analysis of four decades of shoreline change in all 101 islands in the Pacific atoll nation of Tuvalu (north of Fiji,

east of the Solomon Islands) shows that the nation's land area has actually increased by nearly 3 percent.[109] Preconceived and rashly generalizing conclusions should always be avoided.

The evolution of societies is affected by the unpredictability of human behavior, by sudden shifts of long-lasting historical trajectories, by the rise and fall of nations, and is accompanied by our ability to enact meaningful changes. These realities affect many inherently complex (and far from satisfactorily understood) biospheric processes. And because they elicit often contradictory natural responses, such as forests being both sinks and sources of carbon, it is impossible to say with confidence where we will be—in terms of fossil fuel consumption, the pace of decarbonization, or environmental consequences—in 2030 or 2050.

Most notably, what remains in doubt is our collective—in this case global—resolve to deal effectively with at least some critical challenges. Solutions, adjustments, and adaptations are available. Affluent countries could reduce their average per capita energy use by large margins and still retain a comfortable quality of life. Widespread diffusion of simple technical fixes ranging from mandated triple windows to designs of more durable vehicles would have significant cumulative effects. The halving of food waste and changing the composition of global meat consumption would reduce carbon emissions without degrading the quality of food supply. Remarkably, these measures are absent, or rank low, in typical recitals of coming low-carbon "revolutions" that rely on as-yet-unavailable mass-scale electricity storage or on the promise of unrealistically massive carbon capture and its permanent storage underground. There is nothing new about these exaggerated expectations.

In 1991 a well-known environmental activist wrote about "abating global warming for fun and profit."[110] If this promise would have even remotely resembled reality, we would not be faced, three decades later, with the increasing anguish of today's warming catastrophists. Similarly, we are now promised even more astonishing "disruptive" innovations and AI-driven "solutions." The reality is that any sufficiently effective steps will be decidedly non-magical, gradual, and costly. We have been transforming the environment on increasing scales and with rising intensity for millennia, and we have derived many benefits from these changes—but, inevitably, the biosphere has suffered. There are ways to reduce those impacts but the resolve to deploy them at required scales has been lacking, and if we start acting in a sufficiently effective manner (and this now requires doing so on a global scale) we will have to pay a considerable economic and social price. Will we, eventually, do so deliberately, with foresight; will we act only when forced by deteriorating conditions; or will we fail to act in a meaningful way?

7. Understanding the Future

Between Apocalypse and Singularity

"Apocalypse" comes (via Latin) from the ancient Greek *ἀποκάλυψις* Literally, it means "uncovering." In the Christian context, the meaning shifted toward a prophesied unveiling, or revelation, of the second coming, and in modern usage the term has become synonymous with the end of life on Earth, the doomsday, or—to use another Greek biblical term—Armageddon.[1] Clear and unambiguously definitive.

Apocalyptic visions of the future—with assorted hells offered by major religions—have been strongly revived by modern promoters of doom, who have been pointing to rapid population growth, environmental pollution, or now, increasingly, to global warming as the sins that will transport us to the netherworld. In contrast, incorrigible techno-optimists continue the tradition of believing in miracles and the delivery of eternal salvation. It is not uncommon to read how artificial intelligence and deep learning systems will carry us all the way to the "Singularity." This comes from the Latin *singularis*, meaning "individual, unique, unmatched"—but in this chapter it refers to futurist Ray Kurzweil's notion of singularity, i.e. to the mathematical meaning of the term as a point in time at which a function assumes an infinite value.[2] He predicts that, come 2045, machine intelligence will have surpassed human intelligence, what he calls biological and nonbiological intelligence will merge, and machine intelligence will fill the universe at infinite

speed.[3] This is the ultimate ascension. It will make colonization of the rest of the universe an inevitably effortless endeavor.

Long-range modeling of complex systems often relies on producing a fan of possible outcomes constrained by plausible extremes. Apocalypse and singularity offer two absolutes: our future will have to lie somewhere within that all-encompassing range. What has been so remarkable about modern anticipations of the future is how they have gravitated—despite all of the available evidence—toward one of these two extremes. In the past, this tendency toward dichotomy was often described as the clash of catastrophists and cornucopians, but these labels appear to be too timid to reflect the recent extreme polarization of sentiments.[4] And this polarization has been accompanied by a greater propensity for dated quantitative forecasts.

You see them everywhere, from cars (worldwide sales of electric passenger vehicles will reach 56 million by 2040) and carbon (the EU will have net-zero carbon emissions by 2050) to global flying (there will be 8.2 billion travelers by 2037).[5] Or so we're told. In reality, most of these forecasts are no better than simple guesses: any number for 2050 obtained by a computer model primed with dubious assumptions—or, even worse, by a politically expedient decision—has a very brief shelf life. My advice: if you would like a better understanding of what the future may look like, avoid these new-age dated prophecies entirely, or use them primarily as evidence of prevailing expectations and biases.

For generations, businesses and governments were the most common practitioners and consumers of forecasting, then academics joined the game in large numbers from the 1950s, and now anybody can be a forecaster—even without any mathematical skills—simply by using plug-in software or (as has been in vogue lately) by making baseless

qualitative predictions. As in so many other cases of newly expanded endeavors (information flows, mass education), the quantity of modern forecasting has become inversely proportional to its quality. Many forecasts are nothing but the simplest extensions of past trajectories; others are the outcome of complicated interactive models which incorporate large numbers of variables and run using different assumptions each time (essentially the numerical equivalent of narrative scenarios); and some have hardly any quantitative component and are just wishful and exceedingly politically correct narratives.

Quantitative forecasts fall into three broad categories. The smallest includes forecasts that deal with processes whose workings are well known and whose dynamics are inherently restricted to a relatively confined set of outcomes. The second, and a much larger category, includes forecasts pointing in the right direction but with substantial uncertainties regarding the specific outcome. And the third category (I already described some of its recent energy and environmental specimens in the previous chapter) is that of quantitative fables: such forecasting exercises may teem with numbers, but the numbers are outcomes of layered (and often questionable) assumptions, and the processes traced by such computerized fairy tales will have very different real-world endings. Of course, their creators may defend the heuristic value of such exercises, while uninitiated users may exploit some of the conclusions to reinforce their own prejudices or to dismiss plausible alternatives.

Only the forecasts (projections, computer models) in the first category provide solid insights and good guidance, especially when looking only a decade or so ahead. Demographic projections in general, and fertility forecasts in particular, are among the best examples in this limited category. Take a country whose total fertility rate—that is, the number of children the average woman has in her

lifetime—has been below the replacement level (an average of at least 2.1 children per woman is needed to replace the parents) for a generation and, moreover, retreated from 1.8 to 1.5 over the past decade. Such very low fertilities are unlikely to be reversed (no country has done so during the past three decades) to bring any substantial population increase within the next 10 years.[6] The most likely prospects are fertility that may recover a bit (from 1.5 to 1.7) or drop further (to 1.3). While it is impossible to pinpoint the value even in just 10 years, a forecast can offer a relatively narrow range of highly plausible outcomes. For example, the UN's 2019 population forecast for the year 2030 has Poland's total (37.9 million in 2020) declining to 36.9 million, with the low and high variant departing just ±2 percent from the mean, and (barring mass immigration that is unlikely in such an immigration-averse country) there is a very high probability that the actual 2030 count will be within that narrow range.[7]

In contrast, even short-term projections involving complex systems—those that reflect interplays of many technical, economic, and environmental factors, and which can be strongly affected by a number of arbitrary decisions such as unexpectedly generous government subsidies or new laws or sudden policy reversals—remain highly uncertain, and even near-term outlooks result in a broad range of possible outcomes. Forecasts for the worldwide adoption of electric passenger cars are an excellent recent example in this category.[8] Technical difficulties accompanying the introduction of personal electromobility have not been insurmountable, but the sector has been maturing much slower than its uncritical proponents began to claim years ago, while combustion engines keep improving their efficiency and will offer for years to come the advantages of lower initial cost, generations-long familiarity, and ubiquitous servicing.[9]

And while some countries have been aggressively promoting electric car ownership by offering generous subsidies or by mandating specific shares of new vehicles in the future, others have offered only minor or no help. As a result, past near-term forecasts for the worldwide electrification of road transport have almost uniformly overestimated the actual share: between 2014 and 2016 it was put as high as 8–11 percent by 2020, while the actual share was just 2.5 percent.[10] And by 2019, forecasts for electrics as a share of all vehicles on the road by the year 2030 differed by an order of magnitude, while the actual sales of internal combustion vehicles may outnumber those of the electrics for more than a decade.[11]

The third category of quantitative forecasts is the one that merits a closer look, because in retrospect many of them have not only failed to capture at least a proper order of magnitude but their claims and conclusions have turned out to be completely at odds with what actually happened. Remarkably, this is not only true of well-known historical prophecies ranging from the Bible to Nostradamus.[12] Many modern prophets have not done much better, yet with the rise of ubiquitous computing their ranks have swelled, and with the insatiable demand from the media for new bad news, their predictions and scenarios receive unprecedented distribution and (increasingly global) attention.

Failed predictions

Given the abundance of failed forecasts, their systematic recounting, be it by subject, decade, or region, would be tedious. Readers of a certain age will recall that by now we should have relied completely (or at least largely) on nuclear electricity, that Concorde was to be just a prelude to ubiquitous supersonic intercontinental flights, and that

the Y2K glitch should have shut down all computing on January 1, 2000. But a combination of quick references to some well-known cases and brief explanations of some surprisingly little-appreciated failures provides a useful reality check—and there is no reason to assume that such misses will become less common. Moving from relatively simple pencil-and-paper forecasts to complex computerized scenarios makes it easier to perform the requisite calculations and to produce different scenarios, but it does not eliminate the inevitable perils of making assumptions. Just the opposite—more complex models combining the interactions of economic, social, technical, and environmental factors require more assumptions and open the way for greater errors.

An obvious place to start when recounting some of the now-classic forecasting failures is to look at the intellectual duel between cornucopians and catastrophists. Concerns about runaway populations surpassing available means of sustenance voiced during the 1960s could be traced to the record, and at that time still rising, rates of global population growth. For millennia, global population growth was a small fraction of a percent; it rose above 0.5 percent only during the 1770s, above 1 percent by the mid-1920s, but by the late 1950s it was close to 2 percent and still accelerating. Inevitably, many people took notice, in both professional and popular publications, and in 1960 *Science*, America's premier science periodical, succumbed to the worries about unrestrained population growth and published an absurd calculation claiming that the continuation of the historic rate of increase would result in infinitely rapid growth of the global population by November 13, 2026.[13]

This outcome—humanity growing at infinite speed—takes some imagination, but many less extreme, although still catastrophist, predictions helped to create and mobilize the

modern environmental movement.[14] But there was no need to fear runaway populations: catastrophists ignored a simple fact that no form of very rapid growth can go on forever on a finite planet. Doomsday 2026 was obvious nonsense. Before the 1960s ended, global population growth reached its peak at about 2.1 percent per year, and that peak was followed by fairly rapid decline: by the year 2000 the global rate was 1.32 percent, and by 2019 it was just 1.08 percent.[15]

The halving of the relative growth rate in 50 years, and the subsequent decline of the absolute growth rate (it peaked at about 93 million a year in 1987, declined to about 80 million by 2020), changed the outlook so fundamentally that sometime during the early 2020s the world's population will cross a significant demographic milestone as half of it will be living in countries whose total fertility rate is below the replacement level.[16] This new reality immediately invites new catastrophic calculations. If this trend of falling fertility were to continue, when will the global population stop growing? And then, inevitably, when will the last *Homo sapiens* die? And a young catastrophist could speculate again about how many millions of people will die of hunger (during the 2080s?)—not because of runaway growth but because, as populations age and shrink everywhere, there will not be (even after intensive robotization) enough people of working age to feed humanity.

End-of-the-world prophecies concerning resource scarcity have not been limited to food: running out of mineral resources has been another favorite subject of catastrophic visions, and the future of crude oil, the most important energy source of 20th-century civilization, has been a favorite topic of dystopic prophecies. Forecasts of imminent peak oil extraction go back to the 1920s, but they reached new heights of existential fear-mongering during the 1990s

and the first decade of the 21st century.[17] Some committed members of the peak oil cult believed that declining oil extraction would not only bring about the collapse of modern economies but that it would return humanity to a lifestyle far below its preindustrial levels, all the way to that of Paleolithic foragers—to hominins who lived in East Africa 2 million years ago.[18]

And what has actually happened? Catastrophists have always had a hard time imagining that human ingenuity can meet future food, energy, and material needs—but during the past three generations we have done so despite a tripling of the global population since 1950. Instead of megadeaths, the share of undernourished people in low-income countries has been steadily declining, from about 40 percent during the 1960s to only about 11 percent by 2019, and average daily per capita food supply in China, the world's most populous nation, is now about 15 percent higher than in Japan.[19] Instead of desperate fertilizer shortfalls, the application of nitrogenous fertilizers has increased more than 2.5 times since 1975, and the global harvest of staple cereal crops is now about 2.2 times larger.[20] As for crude oil, its total extraction rose by two-thirds between 1995 and 2019, and at the end of that year its pre-COVID-19 price (in constant monies) was lower than it was in 2009.[21] Catastrophists are wrong, time after time.

And techno-optimists, who promise endless near-miraculous solutions, must reckon with a similarly poor record. One of the best-known (and embarrassingly well-documented) failures has been the belief in the all-encompassing power of nuclear fission. Many people appreciate that the partial success achieved by nuclear generation (it produced about 10 percent of the world's electricity in 2019, with shares at 20 percent in the US and, exceptionally, about 72 percent in France) is just a fraction of what was widely expected before 1980.[22] At that time,

leading scientists and large companies not only thought that nuclear fission would eliminate all other forms of electricity generation, they also believed that the original reactors would be largely displaced by fast breeders able to produce (temporarily) more energy than they consumed. The nuclear promise went far beyond electricity generation, and some astonishingly dubious ideas were tested or expensively investigated.

Which decision was more irrational and more doomed from the very start: the pursuit of nuclear-powered flight, or natural gas production assisted by nuclear explosions? Designing a small nuclear reactor that could power submarines was one thing, making it light enough to be airborne turned out to be an insurmountable challenge—but one that was abandoned only in 1961 after spending billions of dollars on this hopeless task.[23] No plane powered by nuclear fission ever took off, but several nuclear bombs *were* detonated in the quest for expanded natural gas production. A 29-kiloton bomb (more than twice as powerful as the one dropped on Hiroshima) was detonated in December 1967 at a depth of about 1.2 kilometers in New Mexico (code name Project Gasbuggy); in September 1969 came a 40-kiloton bomb in Colorado; in 1973 three 33-kiloton bombs, also in Colorado; and the US Atomic Energy Commission anticipated future detonations of 40–50 bombs a year.[24] There were also plans for such activities as using nuclear explosives to carve out new harbors, and using nuclear reactors to power space flight.

Little has changed half a century later: frightening prophecies and utterly unrealistic promises abound. The latest burst of intensified catastrophism has been focused on environmental degradation in general and on concerns about global climate change in particular. Journalists and activists write about climate apocalypse now, issuing final warnings. In the future, areas best suited for human

habitation will shrink, large areas of the Earth are to become uninhabitable soon, climate migration will reshape America and the world, average global income will decline substantially, some prophecies claim that we might only have about a decade left to avert a global catastrophe, and in January 2020 Greta Thunberg went as far as to specify just eight years.[25]

Just a few months later, the president of the UN's General Assembly gave us 11 years to avert a complete social collapse whereupon the planet will be simultaneously burning (suffering unquenchable summer-long fires) and inundated with water (via a rapid sea-level rise). But, *nihil novi sub sole*: in 1989, another high UN official said that "governments have a 10-year window of opportunity to solve the greenhouse effect before it goes beyond human control," which means that by now we must be quite beyond the beyond, and that our very existence might be only a matter of Borgesian imagination.[26] I am convinced that we could do without this continuing flood of never-less-than-worrisome and too-often-quite-frightening predictions. How helpful is it to be told every day that the world is coming to an end in 2050 or even 2030?

Such predictably repetitive prophecies (however well-meant and however passionately presented) do not offer any practical advice about the deployment of the best possible technical solutions, about the most effective ways of legally binding global cooperation, or about tackling the difficult challenge of convincing populations of the need for significant expenditures whose benefits will not be seen for decades to come. And they are, of course, quite unnecessary according to those who argue that a "sustainable future is within our grasp," that the catastrophists have a long history of raising false alarms, who title their writings *Apocalypse Not!* and *Apocalypse Never*, and, in the starkest contradistinction to civilization's

supposedly rapidly approaching final curtain, even go as far (as already noted) as seeing a not-too-distant Singularity.[27]

Why should we fear anything—be it environmental, social, or economic threats—when by 2045, or perhaps even by 2030, our understanding (or rather the intelligence unleashed by the machines we will have created) will know no bounds and hence any problem will become immeasurably less than trivial? Compared to this promise, any other recent specific and intemperate claim—from salvation through nanotechnology to fashioning new synthetic forms of life—appears trite. What will happen? An imminent near-infernal perdition, or speed-of-light godlike omnipotence?

Based on the revealed delusions of past prophecies, neither. We do not have a civilization envisioned in the early 1970s—one of worsening planetary hunger or one energized by cost-free nuclear fission—and a generation from now we will not be either at the end of our evolutionary path or have a civilization transformed by Singularity. We will still be around during the 2030s, albeit without the unimaginable benefits of speed-of-light intelligence. And we will still be trying to do the impossible, to make long-range forecasts. That is bound to bring more embarrassments and more ridiculous predictions, as well as more surprises caused by unanticipated events. Extremes are fairly easy to envisage; anticipating realities that will arise from combinations of inertial developments and unpredictable discontinuities remains an elusive quest. No amount of modeling will eliminate that, and our long-range predictions will continue to err.[28]

This is not a contradiction, not a forecast to dismiss future forecasts, just a highly probable, if not inevitable, conclusion based on the unforeseeable interplay of the inherent inertia of complex systems, with their embedded constants and long-term imperatives on one hand, and

sudden discontinuities and surprises—be they technical (the rise of consumer electronics; possible breakthroughs in electricity storage) or social (the collapse of the USSR; another, much more virulent pandemic)—on the other. What makes all forecasts even harder is that now the key transformations have to unfold on enormous scales.

Inertia, scale, and mass

New departures, new solutions, and new achievements are always with us: we are a very inquisitive species with a remarkable long-term record of adaptation and with even more remarkable recent accomplishments in making the lives of most of the world's population healthier, richer, safer, and longer. Still, fundamental constraints also persist: we have changed some of them through our ingenuity, but such adjustments have their own limits. For example, we cannot eliminate the need for land, water, and nutrients in food production. As we have seen, higher yields reduced the demand for farmland and further reductions are possible if we succeed in the further closing of yield gaps (the differences between yield potential and actual harvests).

These gaps remain substantial. Even in countries that practice intensive crop cultivation (the high use of fertilizers, irrigation), the yields could go up 20–25 percent above the recent average for US corn, and 30–40 percent for Chinese rice—and, because of its still very low average productivity, they could be two to four times as high in sub-Saharan Africa.[29] In the case of high-yielding and already optimized agricultures, the resulting reduction of cropped land could be achieved with relatively small additional demands for fertilizer and irrigation. In contrast, Africa will demand substantial increases in average macronutrient applications and in the extension of irrigation. As in so

many other instances, relative gains in future performance (within biological limits) should not be mistaken for an absolute decoupling of output and input variables, as long as the world's population continues to grow and as long as it demands better nutrition.

In this regard, media reports about "land-less" urban agriculture—hydroponic cultivation in high-rises—are particularly devoid of any real understanding of global food demand. Such high-input operations can produce leafy greens (lettuces, basil) and some vegetables (tomatoes, peppers) whose nutritional value is almost solely in their vitamin C content and roughage.[30] Most assuredly, hydroponic cultivation under constant lights could not be deployed to produce more than 3 billion tons of cereal and leguminous grains, whose high carbohydrate content and relatively high protein and lipid supply are required to feed nearly 8 (soon to be 10) billion people.[31]

The inertia of large, complex systems is due to their basic energetic and material demands—as well as the scale of their operations. Demands for energy and materials are constantly affected by the quest for higher efficiencies and for optimized production processes, but efficiency improvements and relative dematerialization have their physical limits, and advantages brought by new alternatives will have offsetting costs. Examples of such realities abound. Turning, once again, to two fundamental inputs, the theoretical minimum of primary energy needed to produce steel (combining blast furnace and basic oxygen furnace demands) is about 18 gigajoules per ton of hot metal, and ammonia cannot be synthesized from its elements with less than about 21 gigajoules per ton.[32]

One possible solution is to replace steel with aluminum. This lowers the mass of a specific design, but primary aluminum requires five to six times more energy to produce than primary steel, and it cannot be used in many

applications that require steel's much greater strength. The most radical way to cut energy costs and the environmental impact of nitrogen fertilizers is to reduce how much is used: that option is available to affluent countries with their excessive food supply and waste—but hundreds of millions of stunted children, mostly in Africa, need to drink more milk and eat more meat, and that protein can come only from substantially increasing the amount of nitrogen they use in cropping. Just to drive this conclusion home, annual applications of fertilizers average about 160 kilograms per hectare of agricultural land in the EU and less than 20 kilograms in Ethiopia, an order-of-magnitude difference illustrating the huge development gap that is so often ignored in appraisals of global needs.[33]

And in a civilization where production of essential commodities now serves nearly 8 billion people, any departure from established practices also runs repeatedly into the constraints of scale: as we have already seen (in chapter 3), fundamental material requirements are now measured in billions and hundreds of millions of tons per year. This makes it impossible either to substitute such masses for entirely different commodities—what would take the place of more than 4 billion tons of cement or nearly 2 billion tons of steel?—or to make a rapid (years rather than decades) transition to entirely new ways of producing these essential inputs.

This inevitable inertia of mass-scale dependencies can eventually be overcome (recall that, before 1920, we had to devote a quarter of American farmland to feed crops for horses and mules), but many past examples of rapid shifts are not good guides for deriving plausible time spans for any future accomplishments. Past transitions may have been relatively fast because the magnitudes involved were comparatively small. By 1900 the world's primary energy use was roughly split between traditional biomass and

fossil fuels dominated by coal, and all fossil fuels supplied an equivalent of only about 1 billion tons of coal.[34] By the year 2020, the net global supply of fossil fuels was an order of magnitude higher than the total primary energy supply in 1900, and although our technical means are now in so many ways superior, the pace of the new transition (decarbonization) has been slower than the pace of displacing traditional biomass by fossil fuels.

Even though the supply of new renewables (wind, solar, new biofuels) rose impressively, about 50-fold, during the first 20 years of the 21st century, the world's dependence on fossil carbon declined only marginally, from 87 percent to 85 percent of the total supply, and most of that small relative decline was attributable to expanded hydroelectricity generation, an old form of renewable energy.[35] Because the total energy demand was an order of magnitude lower in 1920 than it was in 2020, it was much easier to displace wood by coal in the early 20th century than it is to displace fossil fuels by new renewables (that is, to decarbonize) in the early 21st century. As a result, even a tripling or quadrupling of the recent pace of decarbonization would still leave fossil carbon dominant by 2050.

A category mistake—erroneously assigning to something a quality or action that is properly attributable only to things of another category—is behind the frequent, but deeply mistaken, conclusion that in this new, electronically enabled world everything can, and will, move much faster.[36] Information and connections do so, and so does the adoption of new personal gadgets—but existential imperatives do not belong to the category of microprocessors and mobile phones. Securing the sufficient delivery of water, growing and processing crops, feeding and slaughtering animals, producing and converting enormous quantities of primary energies, and extracting

and altering raw materials to fit a myriad of uses are endeavors whose scales (required to meet the demand of billions of consumers) and infrastructures (that enable the production and distribution of these irreplaceable needs) belong to categories that are quite distinct from making a new social media profile or buying a more expensive smartphone.

Moreover, many techniques that enable these new advances are hardly new. How many people smitten by the thinness of the latest smartphone and by its ability to process information are aware that many fundamental processes that make their mass ownership possible are fairly long in the tooth? Very pure silicon is the basis of all microprocessors, including those that run all modern electronic devices—from the largest supercomputers to the smallest mobile phone—and Jan Czochralski discovered how to grow single silicon crystals in 1915. Large numbers of transistors are built into silicon, and Julius Edgar Lilienfeld patented the first field-effect transistor in 1925. And, as already detailed, integrated circuits were born in 1958–1959, and microprocessors in 1971.[37]

Most of the electricity that energizes all electronic gadgets is generated by steam turbines, machines invented by Charles A. Parsons in 1884, or by gas turbines, with the first one commercially deployed in 1938.[38] While it has been possible to replace a billion landlines by mobile phones within a generation, it will not be possible to replace terawatts of power installed in steam and gas turbines by photovoltaic cells or wind turbines within a similar time span. Mobiles, as complex as they are, are just small devices at the apex of an enormous pyramid of an industry that generates, transforms, and transmits electricity, and that requires mass-scale infrastructure to build, rebuild, and maintain.

These realities help to explain why the fundamentals of our lives will not change drastically in the coming 20–30 years, despite the near-constant flood of claims about superior innovations ranging from solar cells to lithium-ion batteries, from the 3-D printing of everything (from microparts to entire houses) to bacteria able to synthesize gasoline. Steel, cement, ammonia, and plastics will endure as the four material pillars of civilization; a major share of the world's transportation will be still energized by refined liquid fuels (automotive gasoline and diesel, aviation kerosene, and diesel and fuel oil for shipping); grain fields will be cultivated by tractors pulling plows, harrows, seeders, and fertilizer applicators and harvested by combines spilling the grains into trucks. High-rise apartments will not be printed on site by gargantuan machines, and should we soon have another pandemic then the role of the much-touted artificial intelligence will most likely be as underwhelming as it was during the 2020 SARS-CoV-2 pandemic.[39]

Ignorance, persistence, and humility

COVID-19 has provided a perfect—and costly—global reminder of our limited capacity to chart our futures, and that, too, will not (cannot) change in any dramatic way during the coming generation. The latest pandemic came after a decade that was suffused with adulatory praise of unprecedented and supposedly truly "disruptive" scientific and technical advances. Chief among them have been the anticipation of imminent deployments of the miraculous powers of artificial intelligence and neural-learning networks (Singularity-lite, one might say) and genome editing that will make it possible to engineer life forms at will.[40]

Nothing sums up better the excessive nature of these claims than the title of a 2017 bestseller, Yuval Noah Harari's *Homo Deus*.[41] And if more evidence is required, then COVID-19 exposed the emptiness of any notions of our supposed godlike capacity to control our fate: none of those much-touted capabilities was of any use in preventing the rise or controlling the diffusion of those viral RNA strands. The best we could do is what the residents of Italian towns did in the Middle Ages: stay away from others, stay inside for 40 days, isolate for *quaranta giorni*.[42] Vaccines came relatively early, but they do not cure the stricken and they do not prevent the next pandemic. And so we must pray that the next event (because there is always a next one!) will come only after decades of relatively uneventful seasonal viral epidemics, rather than in just a few years and in a much more virulent form.

COVID-19's impact in rich countries in general, and in the United States in particular, also illustrates how misplaced some of our highly touted (and very expensive) future-forming endeavors have been. Foremost among these have been the renewed steps toward manned space flight, and particularly the sci-fi-type goal of missions to Mars; trying to move toward personalized medicine (diagnosis and treatment tailored to individual patients based on their specific risk or response to a disease), with *The Economist* running a special report on this topic on March 12, 2020, just as COVID-19 began to sweep through Europe and North America filling urban hospitals with oxygen-deprived people; and being preoccupied with ever-faster connectivity, with endless hype surrounding the benefits of 5G networks.[43] How irrelevant are all of these quests while (as the cliché goes) the only remaining superpower could not provide its nurses and doctors with enough simple personal protection equipment, including such low-tech items as gloves, masks, caps, and gowns?

Consequently, the US had to pay exorbitant prices to China—the country where the brilliant architects of globalization concentrated nearly all of the manufacturing of these essential items—in order to secure airlifts of inadequate amounts of protective equipment just to prevent hospital closures in the midst of a pandemic.[44] The country that spends more than half a trillion every year on its military (more than all of its potential adversaries put together) was unprepared for an event that was absolutely certain to occur, and it did not have enough basic medical supplies: investment in domestic production worth a few hundred million dollars could have significantly reduced the economic losses of COVID-19, measured in the trillions![45]

Nor did Europe distinguish itself. Member states engaged in competition for jumbo airlifts of protective plastic from China; the vaunted absence of borders was quickly transformed into fortress arrangements; the ever-closer union failed to deliver any union-wide coordinated response; and during the first six months of the pandemic, four of the continent's five most populous nations (UK, France, Italy, and Spain) and two of its richest countries (Switzerland and Luxembourg)—whose health systems were for decades praised as paragons of excellence—recorded some of the world's highest pandemic mortalities.[46] Crises expose realities and strip away obfuscation and misdirection. The response of the affluent world to COVID-19 deserves a single ironic comment: *Homo deus* indeed!

At the same time, the rich world's reaction to COVID-19 illustrates our perennially unrealistic attitude to fundamental realities caused by forgetting even traumatic experiences. As the COVID-19 pandemic began to unfold I did not expect that this challenge would be set within proper historical perspectives (what else is to be expected

in a society dominated by tweets?), and I was not surprised by references to the 1918–1919 influenza that caused the highest, albeit globally highly uncertain, number of pandemic deaths in modern history.[47] But, as I already noted in the chapter on risk, since that time we have lived through three notable (and much better understood) episodes and they have not left any deep imprint in our collective memory.

I already suggested some explanations, but others are plausible. Was the toll of more than a million deaths in 1957–1958 (in most countries taking place incrementally over 6–9 months) seen through the prism of much larger Second World War losses that were still clear in the memory of all adults? Or has our collective perception changed to such an extent that we cannot accept the fact that temporary excessive mortality will always be beyond our control? Or is it simply the fact that forgetting is an essential complement of remembering, be it on a personal or collective level, and that this, too, will not change as we will be, again and again, surprised by what should have been expected?

Persistence is as important as forgetting: despite the promises of new beginnings and bold departures, old patterns and old approaches soon resurface to set the stage for another round of failures. I ask any readers who doubt this to check sentiments during and immediately after the great financial crisis of 2007–2008—and compare them with the post-crisis experience. Who has been found responsible for this systemic near collapse of the financial order? What fundamental departures (besides enormous injections of new monies) were taken to reform questionable practices or to reduce economic inequality?[48]

Returning to the COVID-19 example, this pattern of persistence means that nobody will ever be found responsible for any of the many strategic lapses that

guaranteed the mismanagement of the pandemic even before it began. Undoubtedly, some desultory hearings and a few think-tank papers will produce a list of recommendations, but those will be promptly ignored and will make no difference to deeply ingrained habits. Did the world take any resolute steps after the pandemics of 1918–1919, 1958–1959, 1968–1969, and 2009? Governments will not ensure adequate provisions of needed supplies for a future pandemic, and their response will be as inconsistent—if not as incoherent—as ever. The profits of mass-scale single-source manufacturing will not be changed for less vulnerable but more expensive decentralized production. And people will resume their constant global mingling as they return to intercontinental flights and cruises to nowhere, although it is hard to imagine a better virus incubator than a ship with 3,000 crew, and 5,000 passengers who are often mostly elderly with many pre-existing health conditions.[49]

This also means that we will need, again and again, to relearn how to reconcile ourselves to realities beyond our control. COVID-19 provides a useful reminder. The pandemic has caused the highest excessive mortality among the oldest cohorts and, as already noted, this outcome is obviously linked to our very successful efforts to extend life expectancy.[50] I, born in 1943, have been among the tens of millions of beneficiaries of this trend—but we cannot have it both ways: longer life expectancy will be accompanied by greater vulnerability. Not surprisingly, comorbidities of old age—ranging from fairly common hypertension and diabetes to less common forms of cancer and compromised immunity—have been the best predictors of excess viral mortality.[51]

Yet this will not prevent us, as it did not in 1968 or 2009, taking more steps toward prolonging life expectancy—and then fearing the likely consequences of this quest (seen, to

a lesser but still substantial extent, even during seasonal influenza epidemics). Except the next time, the risk will be significantly higher because the combination of natural aging and prolongation of life will greatly increase the share of people over 65 years of age. The UN projects that share rising by about 70 percent by 2050, and in better-off countries one person in four will be older than that.[52] How will we cope in 2050 with a pandemic that might be more infectious than COVID-19, when in some countries a third of the population is in the most vulnerable category?

These realities disprove any general, automatic, embedded, unavoidable idea of progress and constant improvement that has been promoted by many techno-optimists. Neither the evolution nor the history of our species is an ever-rising arrow. There are no predictable trajectories, no definite targets. The steadily accumulating mass of our understanding and the ability to control a growing number of variables that affect our lives (ranging from food production that is sufficient to feed the world's entire population to highly effective inoculation that prevents previously dangerous infectious diseases) has lowered the overall risk of living, but it has not made many existential perils either more predictable or more manageable.

In some critical instances, our successes and our abilities to avoid the worst outcomes have been due to being prescient, vigilant, and determined to find effective fixes. Notable examples range from eliminating polio (by developing effective vaccines) to lowering the risks of commercial flying (by building more reliable airplanes and introducing better flight control measures), from reducing food pathogens (by a combination of proper food processing, refrigeration, and personal hygiene) to making childhood leukemia a largely survivable illness (by chemotherapy and stem cell transplants).[53] In other cases,

we have been undoubtedly lucky: for decades we have avoided nuclear confrontation caused by an error or accident (we have experienced both on several occasions since the 1950s), not only because of built-in safeguards but also thanks to judgments that could have gone either way.[54] Again, there are no clear indications that our ability to prevent failures has been uniformly increasing.

Fukushima and the Boeing 737 MAX are, unfortunately, two perfect examples of these failures—both with large-scale and lasting consequences. Why did the Tokyo Power Company lose three reactors at its Fukushima Daiichi plant when an earthquake and tsunami struck on March 11, 2011? After all, just about 15 kilometers south of the plant, on the same Pacific shore hit by the same tsunami, its twin, Fukushima Daini, did not suffer the slightest damage. Repercussions of the Fukushima Daiichi failure have ranged from Japan being deprived of 30 percent of its electricity-generating capacity to Germany's decision to shut down all reactors by 2021—and, above all, to an even deeper public distrust of fission as a source of energy.[55]

And why has Boeing—the company that risked everything on developing the 747 in 1966, and that went on to introduce successful new families of jetliners (now up to 787s)—insisted on constantly enlarging the 737 (introduced in 1964), a dubious quest that led to two catastrophic accidents?[56] Why was the plane not grounded, either by Boeing or by the Federal Aviation Administration, immediately after the first fatal accident? Again, the consequences of these failures have been profound: first the temporary grounding of the entire 737 MAX fleet starting in March 2019, then the cessation of the plane's production and cancellation of new orders. In the long run, this will affect Boeing's ability to introduce a much-needed new design to replace its aging 757 (with all of these

consequences magnified by the COVID-induced collapse of international flying).

Given the number of new designs, structures, complex processes, and interactive operations, the failures illustrated by Fukushima and the Boeing 737 MAX cannot be prevented and the coming decades will see other (and unpredictable) manifestations of this reality. The future is a replay of the past—a combination of admirable advances and (un)avoidable setbacks. But there is something new as we look ahead, that unmistakably increasing (albeit not unanimous) conviction that, of all the risks we face, global climate change is the one that needs to be tackled most urgently and effectively. And there are two fundamental reasons why this combination of speed and efficacy will be much harder to realize than is generally assumed.

Unprecedented commitments, delayed rewards

Dealing with this challenge will, for the first time in history, require a truly global, as well as a very substantial and prolonged, commitment. To conclude that we will be able to achieve decarbonization anytime soon, effectively and on the required scales, runs against all past evidence. The UN's first climate conference took place in 1992, and in the intervening decades we have had a series of global meetings and countless assessments and studies—but nearly three decades later there is still no binding international agreement to moderate the annual emissions of greenhouse gases and no prospect for its early adoption.

In order to be effective, this would have to entail nothing less than a global accord. This does not mean that 200 nations must sign on dotted lines: the combined emissions of about 50 small nations add up to less than the likely error in quantifying the emissions of just the top five greenhouse gas producers. No real progress can be

achieved until at least these top five countries, now responsible for 80 percent of all emissions, agree to clear and binding commitments. But we are nowhere close to embarking on such a concerted global action.[57] Recall that the much-praised Paris accord had no specific emission-reduction targets for the world's largest emitters, and that its non-binding pledges would not mitigate anything—they would result in 50 percent higher emissions by 2050!

Moreover, any effective commitments will be expensive, they will have to last for at least two generations in order to bring the desired outcome (of much reduced, if not totally eliminated, greenhouse gas emissions), and even drastic reductions going well beyond anything that could be realistically envisaged will not show any convincing benefits for decades.[58] This raises the extraordinarily difficult problem of intergenerational justice—that is, our never-failing propensity to discount the future.[59]

We value now more than later, and we price it accordingly. An avid 30-year-old mountaineer is willing to pay some $60,000 for permits, gear, Sherpas, oxygen, and other expenses to climb Mount Everest next year. But he would demand a steep discount—reflecting such obvious intervening uncertainties as his health, the stability of future Nepali governments, the probability of major Himalayan earthquakes preventing any expeditions, and the likelihood of shutting down the access—for buying a promise to scale the mountain in 2050. This universal inclination to discount the future matters greatly when contemplating such complex and costly undertakings as pricing carbon in order to mitigate global climate change, because there would no discernible economic benefits for the generation of people that would launch the expensive quest. Because greenhouse gases remain in the atmosphere for long periods of time after they have been emitted (for CO_2, up to 200 years), even very strong

mitigation efforts would not give a clear signal of success—the first significant decline of global mean surface temperature—for several decades.[60]

Obviously, a temperature rise that would continue for 25–35 years after the launching of a massive global decarbonization effort would present a major challenge for enacting and pursuing such drastic measures. But because there are currently no globally binding commitments that could see any widespread adoption of such steps within a few years, both the break-even point and the onset of measurable temperature declines advance even further into the future. A commonly used climate-economy model indicates the break-even year (when the optimal policy would begin to produce net economic benefit) for mitigation efforts launched in the early 2020s would be only around 2080.

Should average global life expectancy (about 72 years in 2020) remain the same, then the generation born near the middle of the 21st century would be the first to experience cumulative economic net benefit from climate-change mitigation policy.[61] Are the young citizens of affluent countries ready to put these distant benefits ahead of their more immediate gains? Are they willing to sustain this course for more than half a century even as the low-income countries with growing populations continue, as a matter of basic survival, to expand their reliance on fossil carbon? And are the people now in their 40s and 50s ready to join them in order to bring about rewards they will never see?

The latest pandemic has served as yet another reminder that one of the best ways to minimize the impact of increasingly global challenges is to have a set of priorities and basic measures for how to deal with them—but the pandemic, with its incoherent and non-uniform inter- and intranational measures, has also shown how difficult it would be to codify such principles and to follow such

guidelines. Failures revealed during crises offer costly and convincing illustrations of our recurrent inability to get the basics right, to take care of the fundamentals. By now, readers of this book will appreciate that this (short) list must include the security of basic food, energy, and material supply, all provided with the least possible impact on the environment, and all done while realistically appraising the steps that we can take to minimize the extent of future global warming. That is a daunting prospect, and nobody can be sure that we will succeed—or that we will fail.

Being agnostic about the distant future means being honest: we have to admit the limits of our understanding, approach all planetary challenges with humility, and recognize that advances, setbacks, and failures will all continue to be a part of our evolution and that there can be no assurance of (however defined) ultimate success, no arrival at any singularity—but, as long as we use our accumulated understanding with determination and perseverance, there will also not be an early end of days. The future will emerge from our accomplishments and failures, and while we might be clever (and lucky) enough to foresee some of its forms and features, the whole remains elusive even when looking just a generation ahead.

The first draft of this closing chapter was written on May 8, 2020, the 75th anniversary of the end of the Second World War in Europe. Let’s imagine a scenario in which on that spring day in the mid-20th century a small group of people embodying all extant knowledge of the time sat down to discuss and predict the state of the world in 2020. Being aware of the latest breakthroughs in areas ranging from engineering (gas turbines, nuclear reactors, electronic computers, rockets) to life sciences (antibiotics, pesticides, herbicides, vaccines), they could correctly foresee many rising trajectories, ranging from mass automobilization and affordable intercontinental flight to

electronic computing, and from rising crop yields to significant gains in life expectancy.

But they would not be able to describe the advances, complexities, and nuances of the world that we have created by our accomplishments and failures during the intervening 75 years. To stress this impossibility, just think in national terms. In 1945 Japan's wooden cities were (save for Kyoto) essentially leveled. Europe was in postwar disarray, shortly to be split by the Cold War. The USSR was victorious but at an enormous cost, and it remained under Stalin's ruthless rule. The US emerged as an unprecedented superpower, generating about half of the world's economic product. China was desperately poor and, again, on the brink of civil war. Who could have traced their specific trajectories of rise and fall (Japan), of new prosperity, new problems, new unity, and new disunity (Europe), of aggressive confidence ("We will bury you!") and demise (USSR), of blunders, defeats, wasted accomplishments, and unrealized possibilities (USA), and of suffering, the world's worst famine, slow recovery, and steep ascent to questionable heights (China)?

Nobody in 1945 could have predicted a world with more than 5 billion additional people that is also better fed than at any time in history—even as it keeps wasting an indefensibly high share of all the food it grows. Nor did anybody foresee a world that relegated a number of infectious diseases (most notably polio everywhere, and tuberculosis in affluent nations) to historical footnotes, but that cannot keep economic inequality from widening even in the richest countries; a world that is at once much cleaner and much healthier yet also more polluted in new ways (from plastic in the ocean to heavy metals in soils) and, due to the ongoing biospheric degradation, also more precarious; or a world suffused in instant and essentially free information that comes at the price of massively

disseminated misinformation, lies and reprehensible claims.

A lifetime later, there is no reason to believe that we are in a better position to foresee the extent of coming technical innovations (unless, of course, you are a believer in near-imminent Singularity), the events that will shape the fortunes of nations, and the decisions (or their regrettable absence) that will determine the fate of our civilization during the next 75 years. Despite the recent preoccupation with the eventual impacts of global warming and with the need for rapid decarbonization, few uncertain outcomes will be as important in determining our future as the trajectory of the global population during the remainder of the 21st century.

Extreme forecasts offer very different futures: will the global population surpass 15 billion by 2100 (nearly twice as many as in 2020), or will it shrink to 4.8 billion, losing more than half of today's total, with China shrinking by 48 percent?[62] As expected, the medium variants of these forecasts are not that far apart (8.8 and 10.9 billion). Still, being 2 billion people apart is not an inconsequential gap, and these comparisons show how even basic population forecasts veer apart after just a single generation. All too obviously, even when forecasts go only as far as today's life expectancy in affluent countries, the implications of their extreme values shape two very different economic, social, and environmental trajectories. And as the first and second drafts of this book were written during the first and second waves of COVID-19, it is quite realistic to ask if the new pandemics we will face throughout the remainder of the 21st century (given their post-1900 frequency—1918, 1957, 1968, 2009, 2020—we can expect at least two or three such events before 2100) will be similar, much weaker, or far more virulent than the 2020 event. Living with these fundamental uncertainties remains the essence of the

human condition—and it limits our ability to act with foresight.

As I noted in the opening chapter, I am not a pessimist or an optimist, I am a scientist. There is no agenda in understanding how the world *really* works.

A realistic grasp of our past, present, and uncertain future is the best foundation for approaching the unknowable expanse of time before us. While we cannot be specific, we know that the most likely prospect is a mixture of progress and setbacks, of seemingly insurmountable difficulties and near-miraculous advances. The future, as ever, is not predetermined. Its outcome depends on our actions.

Appendix: Understanding Numbers

Orders of Magnitude

Time flies, organisms grow, things change. In the world of fiction these inexorable processes and outcomes are, almost without exception, handled in qualitative terms. In fairy tales it has always been once upon a time and the protagonists are rich (princes) and poor (Cinderellas), beautiful (maidens) and ugly (ogres), bold (knights) or timid (mice). Numbers usually enter only as simple counters, as devices serving the plot, often in threes: three brothers, three wishes, three little pigs … Not much changes in modern fiction. Hemingway's Lady Brett Ashley is "damned good-looking" but we never learn her height, and Fitzgerald's storied Gatsby makes his first appearance just as "a man of about my age" and we never learn his age —or his real wealth. Only exact timing becomes somewhat more prominent, often in the first sentence. Zola's *Money*: "Eleven o'clock had just struck at the Bourse …" Faulkner's *Intruder in the Dust*: "It was just noon that Sunday morning …" Solzhenitsyn's *One Day in the Life of Ivan Denisovich*: "At five o'clock that morning …"

In contrast, today's world is full of numbers. The new fairy tales, the stories about improbable billionaires, unfailingly note the latest sums to their credit; the new tragedies, reports of the latest ferry sinking or of yet another mass homicide, always come with the number of victims. Daily counts of national and global deaths became the inescapable mark of the 2020 pandemic. Ours is a new, quantitative world, where people measure numbers of their

“friends” (on Facebook), of their daily steps (by Fitbit), and of their investment prowess (by beating the NASDAQ average). This quantification is pervasive but, all too often, its quality is questionable, as the numbers range from precise and repeated measurements to sloppy assumptions and careless estimates. Unfortunately, few people who see, repeat, and use these numbers question their origins, and very few try to judge them in context. But even the best modern numbers—those that may be perfect measures of complex realities—are often elusive because they represent quantities that are either too large or too small for any intuitive comprehension.

This makes them easy subjects for misrepresentation and misuse. Even preschoolers have a mental system of magnitude representation that creates an intuitive “number sense,” and this capability improves with schooling.[1] Obviously, this number system is only approximate, and it fails as the quantities rise to thousands, millions, and billions. This is where orders of magnitude come in handy. Think of them simply as the total number of digits that follow the first digit of any whole number, or the number of digits following the first digit before the decimal point. No digit follows 7 (and no additional digit comes between the first number and the decimal point in 3.5) and hence both of these numbers are of a zero order of magnitude. This is expressed on a base-10 (decadic) logarithmic scale as 10^0. Any number between 1 and 10 will be a multiple of 10^0, 10 becomes 10^1, 20 is 2×10^1. The advantages of this become quickly apparent as the numbers grow bigger. A 10-fold jump brings us to items counted in hundreds (10^2) and then to thousands (10^3), tens of thousands (10^4), hundreds of thousands (10^5), and millions (10^6).

Beyond that, we get into realms where it is easy to make order of magnitude mistakes: some rich families (business founders, owners, or lucky inheritors) now add annually to

their holdings tens (10^7) or hundreds (10^8) of millions of dollars; in 2020 the world had about 2,100 billionaires (10^9 dollars), and the richest ones are now valued at more than $100 billion or 10^{11} dollars.[2] In terms of individual net worth, compared with the few dollars' worth of tattered clothes and the worn-out shoes of a destitute African migrant, the gap is thus 10 orders of magnitude.

This difference is so large that we can find no equivalent among the properties separating the two most notable classes of terrestrial animals: birds and mammals. The difference between the body masses of the smallest and the largest mammals (the Etruscan shrew at 10^0 grams and the African elephant at 10^6 grams) is "just" six orders of magnitude. The difference between the wingspan of the smallest and the largest flying birds (the bee hummingbird at 3 centimeters and the Andean condor at 320 centimeters) is only two orders of magnitude.[3] Clearly, some humans have gone far further than natural evolution ever could in separating themselves from the crowd.

And there is an even easier way to indicate orders of magnitude than by spelling out full value designations or writing them out as exponents of decadic logarithms. Because these multiples are encountered so frequently in both scientific research and in engineering practice, they were assigned specific Greek names to be used as prefixes for the first three orders of magnitude—10^1 is deka, 10^2 is hecto, 10^3 is kilo—and then for every third order: 10^6 is mega, 10^9 giga, all the way to yotta, 10^{24}, now the highest named order of magnitude. Everything—from actual numbers to specific names—is summarized in the following table:

Multiples in the International System of Units used in the text

Prefix	Abbreviation	Scientific notation
hecto	h	10^2
kilo	k	10^3
mega	M	10^6
giga	G	10^9
tera	T	10^{12}
peta	P	10^{15}
exa	E	10^{18}
zetta	Z	10^{21}
yotta	Y	10^{24}

Yet another way to illustrate the unprecedented range of magnitudes that enables the functioning of modern societies is to compare them with the range of traditional experiences. Two key examples will suffice. In preindustrial societies, the extremes of travel speeds on land differed only by a factor of two, from slow walking (4 km/hour) to horse-drawn coaches (8 km/hour) for those who could pay for a seat (often un-upholstered). In contrast, travel speeds now range over two orders of magnitude, from 4 km/hour for slow walking to 900 km/hour for jetliners.

And the most powerful prime mover (an organism or machine delivering kinetic energy) an individual could commonly control during the preindustrial era was a powerful horse at 750 watts.[4] Now hundreds of millions of people drive vehicles whose power ranges between 100 and 300 kilowatts—up to 400 times the power of a strong horse—and the pilot of a wide-body jetliner commands about 100 megawatts (equivalent to more than 130,000 strong horses) in cruising mode. These gains have been too large to be grasped directly or intuitively: understanding

the modern world needs a careful attention to orders of magnitude!

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Review of World Energy.

50 Feynman, *The Feynman Lectures on Physics*, vol. 1, pp. 4–6.

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52 B. Bowers, *Lengthening the Day: A History of Lighting* (Oxford: Oxford University Press, 1988).

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54 First commercial uses of small AC electric motors came in the US during the late 1880s, and during the 1890s a small fan powered by a 125 W motor sold nearly 100,000 units: L. C. Hunter and L. Bryant, *A History of Industrial Power in the United States, 1780–1930*, vol. 3: *The Transmission of Power* (Cambridge, MA: MIT Press, 1991), p. 202.

55 S. H. Schurr, "Energy use, technological change, and productive efficiency," *Annual Review of Energy* 9 (1984), pp. 409–425.

56 Two basic designs are eccentric rotating mass vibration motors and linear vibration motors. Coin-type motors are now the thinnest (as little as 1.8 mm) available units (https://www.vibrationmotors.com/vibration-motor-product-guide/cell-phone-vibration-motor). Given the global smartphone sales—1.37 billion units in 2019 (https://www.canalys.com/newsroom/canalys-global-smartphone-market-q4-2019)—no other electric motors are now made in comparable quantities.

57 French TGV trains have two power cars whose motors have total power of 8.8–9.6 MW. In Japan's

Series N700 Shinkansen, 14 out of 16 cars are motor cars with a total power of 17 MW: http://www.railway-research.org/IMG/pdf/r.1.3.3.3.pdf.

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62 The early history of electricity is recounted in L. Figuier, *Les nouvelles conquêtes de la science: L’électricité* (Paris: Manoir Flammarion, 1888); A. Gay and C. H. Yeaman, *Central Station Electricity*

Supply (London: Whittaker & Company, 1906); M. MacLaren, *The Rise of the Electrical Industry During the Nineteenth Century* (Princeton, NJ: Princeton University Press, 1943); Smil, *Creating the Twentieth Century*, pp. 32–97.

63 Even in the US it is only slightly higher. In 2019, 27.5 percent of all US fossil fuels (roughly split between coal and natural gas, with liquid fuels accounting for a negligible share) were used to generate electricity: https://flowcharts.llnl.gov/content/assets/images/energy/us/Energy_US_2019.png.

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65 International Atomic Energy Agency, *The Database of Nuclear Power Reactors* (Vienna: IAEA, 2020).

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67 Tokyo Metro, Tokyo Station Timetable (accessed 2020), https://www.tokyometro.jp/lang_en/station/tokyo/timetable/marunouchi/a/index.html.

68 A large collection of nighttime satellite images is available at https://earthobservatory.nasa.gov/images/event/79869/earth-at-night.

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70 There were no problems with electricity supply during the periods of high COVID-19 mortality, but

in some cities there were temporary shortages of mortuary capacity and refrigerated trucks had to be deployed. Mortuary refrigeration is another critical sector dependent on electric motors: https://www.fiocchetti.it/en/prodotti.asp?id=7.

71 The concept recognizes that it will not be possible to eliminate all anthropogenic emissions of CO_2, but neither is there any agreement about how substantial the direct capture from the air would have to be nor any large-scale and affordable processes to do so. I will consider some of these options in the closing chapter.

72 United Nations Climate Change, "Commitments to net zero double in less than a year" (September 2020), https://unfccc.int/news/commitments-to-net-zero-double-in-less-than-a-year. See also the Climate Action Tracker (https://climateactiontracker.org/countries/).

73 The Danish Energy Agency, *Annual Energy Statistics* (2020), https://ens.dk/en/our-services/statistics-data-key-figures-and-energy-maps/annual-and-monthly-statistics.

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78 European Commission, *Going Climate-Neutral by 2050* (Brussels: European Commission, 2020).

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80 In January 2020, the longest scheduled flights were Newark–Singapore (9,534 km), Auckland–Doha, and Perth–London, the first one taking about 18 hours: T. Pallini, “The 10 longest routes flown by airlines in 2019,” Business Insider (April 2020),

https://www.businessinsider.com/top-10-longest-flight-routes-in-the-world-2020-4.

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84 International Energy Agency, *World Energy Outlook 2020* (Paris: IEA, 2020), https://www.iea.org/reports/world-energy-outlook-2020.

85 V. Smil, "What we need to know about the pace of decarbonization," *Substantia* 3/2, supplement 1 (2019), pp. 13–28; V. Smil, "Energy (r)evolutions take time," *World Energy* 44 (2019), pp. 10–14. For a different perspective, see Energy Transitions Commission, *Mission Possible: Reaching Net-Zero Carbon Emissions from Harder-to-Abate Sectors by Mid-Century* (2018), http://www.energy-transitions.org/sites/default/files/ETC_MissionPossible_FullReport.pdf.

2. Understanding Food Production: Eating Fossil Fuels

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3 K. W. Butzer, *Early Hydraulic Civilization in Egypt* (Chicago: University of Chicago Press, 1976); K. W. Butzer, “Long-term Nile flood variation and political discontinuities in Pharaonic Egypt,” in J. D. Clark and S. A. Brandt, eds., *From Hunters to Farmers* (Berkeley: University of California Press 1984), pp. 102–112.

4 FAO, *The State of Food Security and Nutrition in the World* (Rome: FAO, 2020), http://www.fao.org/3/ca9692en/CA9692EN.pdf.

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Kansas farms: Kansas Department of Agriculture, Kansas Farm Facts (2019), https://agriculture.ks.gov/about-kda/kansas-agriculture.

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3. Understanding Our Material World: The Four Pillars of Modern Civilization

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4. Understanding Globalization: Engines, Microchips, and Beyond

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5. Understanding Risks: From Viruses to Diets to Solar Flares

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6. Understanding the Environment: The Only Biosphere We Have

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7. Understanding the Future: Between Apocalypse and Singularity

1 Books on apocalypticism and apocalyptic prophecies, imagination, and interpretations are quite numerous, but I would not presume to make any recommendations regarding this particular kind of fiction writing.

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Appendix: Understanding Numbers: Orders of Magnitude

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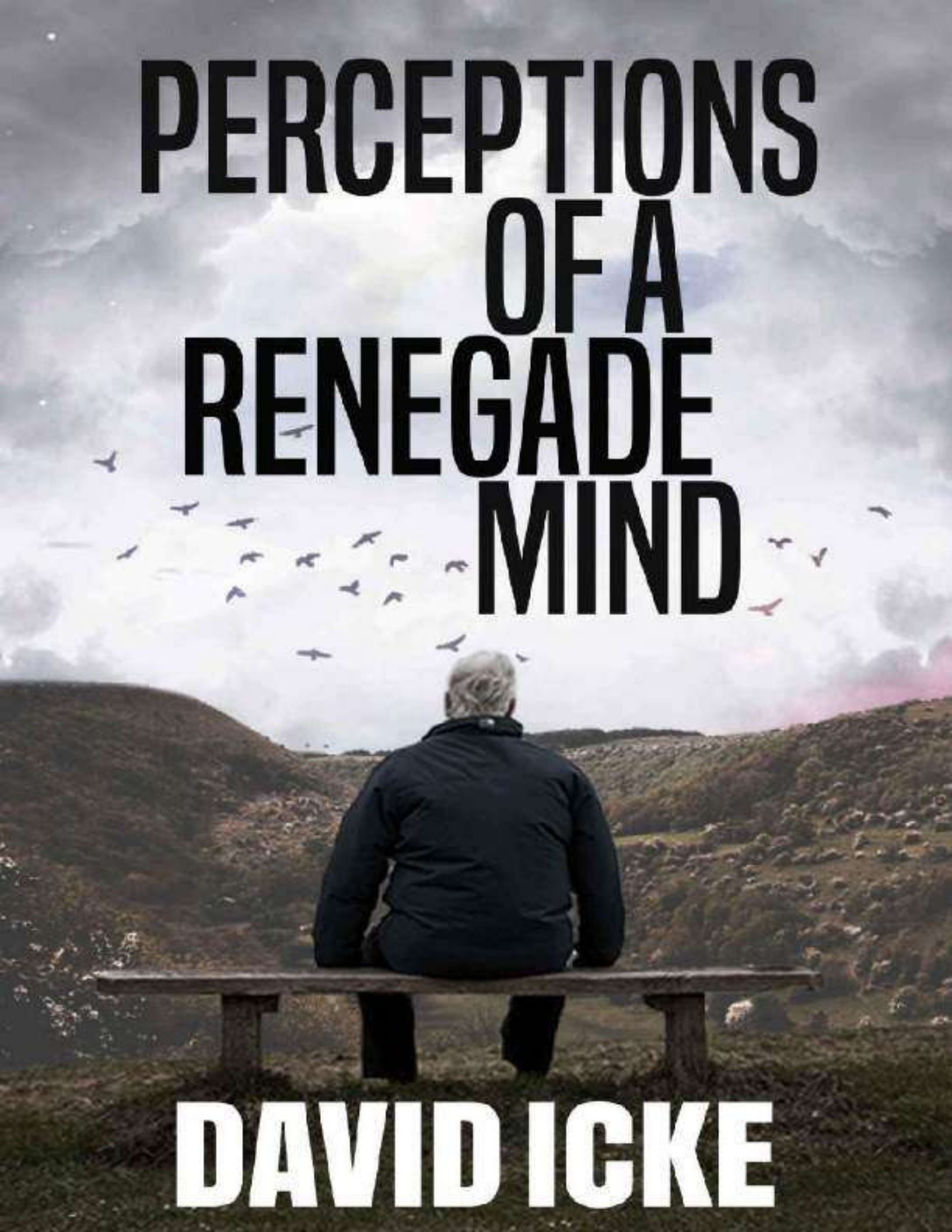

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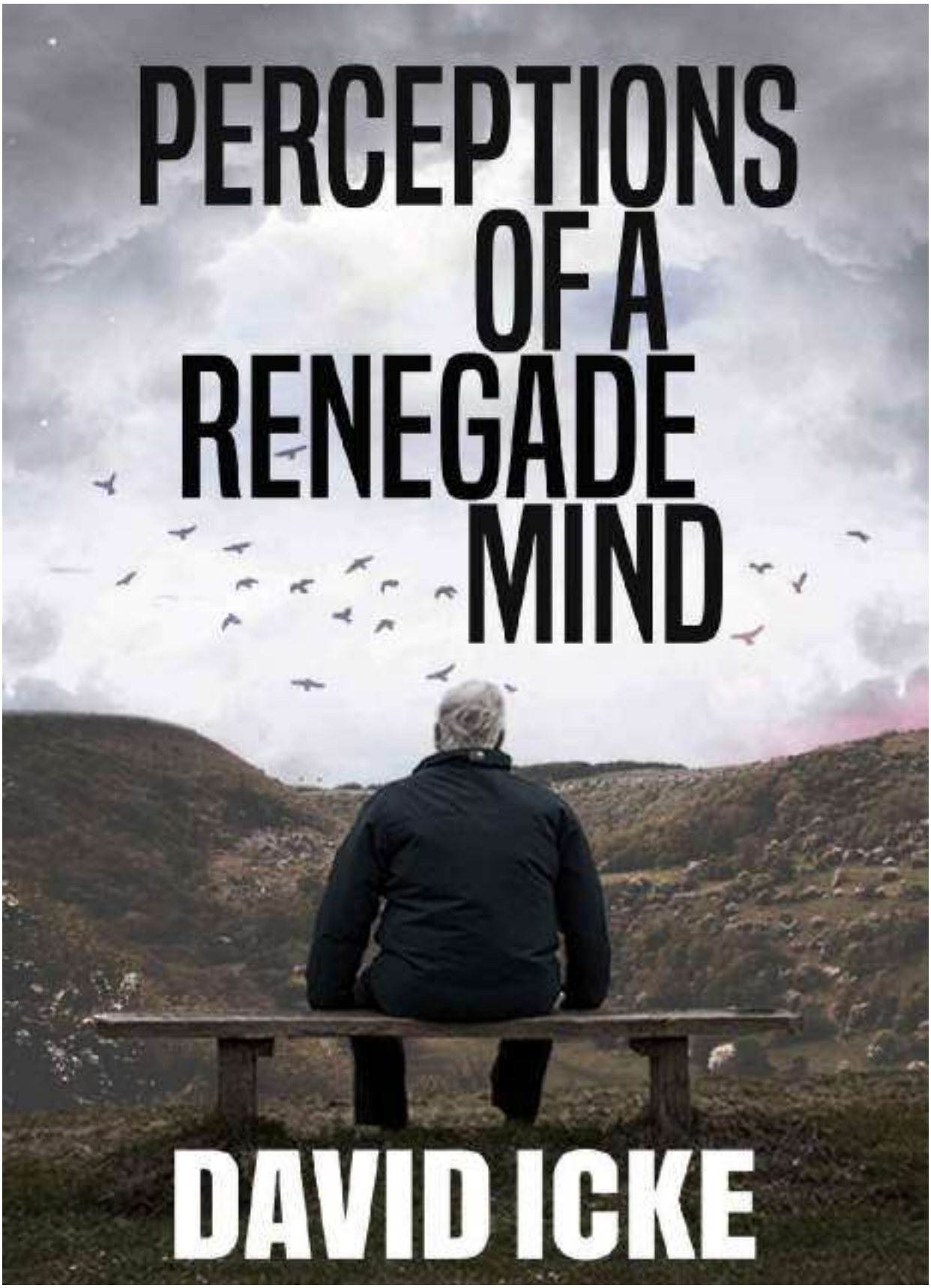
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Renegade:
Adjective
‘Having rejected tradition: Unconventional.’
Merriam-Webster Dictionary

Acquiescence to tyranny is the death of the spirit

You may be 38 years old, as I happen to be. And one day, some great opportunity stands before you and calls you to stand up for some great principle, some great issue, some great cause. And you refuse to do it because you are afraid … You refuse to do it because you want to live longer … You're afraid that you will lose your job, or you are afraid that you will be criticised or that you will lose your popularity, or you're afraid that somebody will stab you, or shoot at you or bomb your house; so you refuse to take the stand.

Well, you may go on and live until you are 90, but you're just as dead at 38 as you would be at 90. And the cessation of breathing in your life is but the belated announcement of an earlier death of the spirit.

Martin Luther King

How the few control the many and always have – the many do whatever they're told

'Forward, the Light Brigade!'
Was there a man dismayed?
Not though the soldier knew
Someone had blundered.
Theirs not to make reply,
Theirs not to reason why,
Theirs but to do and die.
Into the valley of Death
Rode the six hundred.

Cannon to right of them,
Cannon to left of them,
Cannon in front of them
Volleyed and thundered;
Stormed at with shot and shell,
Boldly they rode and well,
Into the jaws of Death,
Into the mouth of hell
Rode the six hundred

Alfred Lord Tennyson (1809-1892)

The mist is lifting slowly
I can see the way ahead
And I've left behind the empty streets
That once inspired my life
And the strength of the emotion
Is like thunder in the air
'Cos the promise that we made each other
Haunts me to the end

The secret of your beauty
And the mystery of your soul
I've been searching for in everyone I meet
And the times I've been mistaken
It's impossible to say
And the grass is growing
Underneath our feet

The words that I remember
From my childhood still are true
That there's none so blind
As those who will not see
And to those who lack the courage
And say it's dangerous to try
Well they just don't know
That love eternal will not be denied

I know you're out there somewhere
Somewhere, somewhere
I know you're out there somewhere

Somewhere you can hear my voice
I know I'll find you somehow
Somehow, somehow
I know I'll find you somehow
And somehow I'll return again to you

The Moody Blues

Are you a gutless wonder - or a Renegade Mind?

Monuments put from pen to paper,
Turns me into a gutless wonder,
And if you tolerate this,
Then your children will be next.
Gravity keeps my head down,
Or is it maybe shame ...

Manic Street Preachers

Rise like lions after slumber
In unvanquishable number.
Shake your chains to earth like dew
Which in sleep have fallen on you.
Ye are many – they are few.

Percy Shelley

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CHAPTER ONE

I'm thinking' – Oh, but *are* you?

Think for yourself and let others enjoy the privilege of doing so too
Voltaire

French-born philosopher, mathematician and scientist René Descartes became famous for his statement in Latin in the 17th century which translates into English as: 'I think, therefore I am.'

On the face of it that is true. Thought reflects perception and perception leads to both behaviour and self-identity. In that sense 'we' are what we think. But who or what is doing the thinking and is thinking the only route to perception? Clearly, as we shall see, 'we' are not always the source of 'our' perception, indeed with regard to humanity as a whole this is rarely the case; and thinking is far from the only means of perception. Thought is the village idiot compared with other expressions of consciousness that we all have the potential to access and tap into. This has to be true when we *are* those other expressions of consciousness which are infinite in nature. We have forgotten this, or, more to the point, been manipulated to forget.

These are not just the esoteric musings of the navel. The whole foundation of human control and oppression is control of perception. Once perception is hijacked then so is behaviour which is dictated by perception. Collective perception becomes collective behaviour and collective behaviour is what we call human society. Perception is all and those behind human control know that which is

why perception is the target 24/7 of the psychopathic manipulators that I call the Global Cult. They know that if they dictate perception they will dictate behaviour and collectively dictate the nature of human society. They are further aware that perception is formed from information received and if they control the circulation of information they will to a vast extent direct human behaviour. Censorship of information and opinion has become globally Nazi-like in recent years and never more blatantly than since the illusory 'virus pandemic' was triggered out of China in 2019 and across the world in 2020. Why have billions submitted to house arrest and accepted fascistic societies in a way they would have never believed possible? Those controlling the information spewing from government, mainstream media and Silicon Valley (all controlled by the same Global Cult networks) told them they were in danger from a 'deadly virus' and only by submitting to house arrest and conceding their most basic of freedoms could they and their families be protected. This monumental and provable lie became the *perception* of the billions and therefore the *behaviour* of the billions. In those few words you have the whole structure and modus operandi of human control. Fear is a perception – **F**alse **E**motion **A**ppearing **R**eal – and fear is the currency of control. In short … get them by the balls (or give them the impression that you have) and their hearts and minds will follow. Nothing grips the dangly bits and freezes the rear-end more comprehensively than fear.

World number 1

There are two 'worlds' in what appears to be one 'world' and the prime difference between them is knowledge. First we have the mass of human society in which the population is maintained in coldly-calculated ignorance through control of information and the 'education' (indoctrination) system. That's all you really need to control to enslave billions in a perceptual delusion in which what are perceived to be *their* thoughts and opinions are ever-repeated mantras that the system has been downloading all their lives through 'education', media, science, medicine, politics and academia

in which the personnel and advocates are themselves overwhelmingly the perceptual products of the same repetition. Teachers and academics in general are processed by the same programming machine as everyone else, but unlike the great majority they never leave the 'education' program. It gripped them as students and continues to grip them as programmers of subsequent generations of students. The programmed become the programmers – the programmed programmers. The same can largely be said for scientists, doctors and politicians and not least because as the American writer Upton Sinclair said: 'It is difficult to get a man to understand something when his salary depends upon his not understanding it.' If your career and income depend on thinking the way the system demands then you will – bar a few free-minded exceptions – concede your mind to the Perceptual Mainframe that I call the Postage Stamp Consensus. This is a tiny band of perceived knowledge and possibility 'taught' (downloaded) in the schools and universities, pounded out by the mainstream media and on which all government policy is founded. Try thinking, and especially speaking and acting, outside of the 'box' of consensus and see what that does for your career in the Mainstream Everything which bullies, harasses, intimidates and ridicules the population into compliance. Here we have the simple structure which enslaves most of humanity in a perceptual prison cell for an entire lifetime and I'll go deeper into this process shortly. Most of what humanity is taught as fact is nothing more than programmed belief. American science fiction author Frank Herbert was right when he said: 'Belief can be manipulated. Only knowledge is dangerous.' In the 'Covid' age belief is promoted and knowledge is censored. It was always so, but never to the extreme of today.

World number 2

A 'number 2' is slang for 'doing a poo' and how appropriate that is when this other 'world' is doing just that on humanity every minute of every day. World number 2 is a global network of secret societies and semi-secret groups dictating the direction of society via

governments, corporations and authorities of every kind. I have spent more than 30 years uncovering and exposing this network that I call the Global Cult and knowing its agenda is what has made my books so accurate in predicting current and past events. Secret societies are secret for a reason. They want to keep their hoarded knowledge to themselves and their chosen initiates and to hide it from the population which they seek through ignorance to control and subdue. The whole foundation of the division between World 1 and World 2 is *knowledge*. What number 1 knows number 2 must not. Knowledge they have worked so hard to keep secret includes (a) the agenda to enslave humanity in a centrally-controlled global dictatorship, and (b) the nature of reality and life itself. The latter (b) must be suppressed to allow the former (a) to prevail as I shall be explaining. The way the Cult manipulates and interacts with the population can be likened to a spider's web. The 'spider' sits at the centre in the shadows and imposes its will through the web with each strand represented in World number 2 by a secret society, satanic or semi-secret group, and in World number 1 – the world of the seen – by governments, agencies of government, law enforcement, corporations, the banking system, media conglomerates and Silicon Valley (Fig 1 overleaf). The spider and the web connect and coordinate all these organisations to pursue the same global outcome while the population sees them as individual entities working randomly and independently. At the level of the web governments *are* the banking system *are* the corporations *are* the media *are* Silicon Valley *are* the World Health Organization working from their inner cores as one unit. Apparently unconnected countries, corporations, institutions, organisations and people are on the *same team* pursuing the same global outcome. Strands in the web immediately around the spider are the most secretive and exclusive secret societies and their membership is emphatically restricted to the Cult inner-circle emerging through the generations from particular bloodlines for reasons I will come to. At the core of the core you would get them in a single room. That's how many people are dictating the direction of human society and its transformation

through the ‘Covid’ hoax and other means. As the web expands out from the spider we meet the secret societies that many people will be aware of – the Freemasons, Knights Templar, Knights of Malta, Opus Dei, the inner sanctum of the Jesuit Order, and such like. Note how many are connected to the Church of Rome and there is a reason for that. The Roman Church was established as a revamp, a rebranding, of the relocated ‘Church’ of Babylon and the Cult imposing global tyranny today can be tracked back to Babylon and Sumer in what is now Iraq.

Figure 1: The global web through which the few control the many. (Image Neil Hague.)

Inner levels of the web operate in the unseen away from the public eye and then we have what I call the cusp organisations located at the point where the hidden meets the seen. They include a series of satellite organisations answering to a secret society founded in London in the late 19th century called the Round Table and among them are the Royal Institute of International Affairs (UK, founded in 1920); Council on Foreign Relations (US, 1921); Bilderberg Group (worldwide, 1954); Trilateral Commission (US/worldwide, 1972); and the Club of Rome (worldwide, 1968) which was created to exploit environmental concerns to justify the centralisation of global power to ‘save the planet’. The Club of Rome instigated with others the human-caused climate change hoax which has led to all the ‘green

new deals' demanding that very centralisation of control. Cusp organisations, which include endless 'think tanks' all over the world, are designed to coordinate a single global policy between political and business leaders, intelligence personnel, media organisations and anyone who can influence the direction of policy in their own sphere of operation. Major players and regular attenders will know what is happening – or some of it – while others come and go and are kept overwhelmingly in the dark about the big picture. I refer to these cusp groupings as semi-secret in that they can be publicly identified, but what goes on at the inner-core is kept very much 'in house' even from most of their members and participants through a fiercely-imposed system of compartmentalisation. Only let them know what they need to know to serve your interests and no more. The structure of secret societies serves as a perfect example of this principle. Most Freemasons never get higher than the bottom three levels of 'degree' (degree of knowledge) when there are 33 official degrees of the Scottish Rite. Initiates only qualify for the next higher 'compartment' or degree if those at that level choose to allow them. Knowledge can be carefully assigned only to those considered 'safe'. I went to my local Freemason's lodge a few years ago when they were having an 'open day' to show how cuddly they were and when I chatted to some of them I was astonished at how little the rank and file knew even about the most ubiquitous symbols they use. The mushroom technique – keep them in the dark and feed them bullshit – applies to most people in the web as well as the population as a whole. Sub-divisions of the web mirror in theme and structure transnational corporations which have a headquarters somewhere in the world dictating to all their subsidiaries in different countries. Subsidiaries operate in their methodology and branding to the same centrally-dictated plan and policy in pursuit of particular ends. The Cult web functions in the same way. Each country has its own web as a subsidiary of the global one. They consist of networks of secret societies, semi-secret groups and bloodline families and their job is to impose the will of the spider and the global web in their particular country. Subsidiary networks control and manipulate the national political system, finance, corporations, media, medicine, etc. to

ensure that they follow the globally-dictated Cult agenda. These networks were the means through which the 'Covid' hoax could be played out with almost every country responding in the same way.

The 'Yessir' pyramid

Compartmentalisation is the key to understanding how a tiny few can dictate the lives of billions when combined with a top-down sequence of imposition and acquiescence. The inner core of the Cult sits at the peak of the pyramidal hierarchy of human society (Fig 2 overleaf). It imposes its will – its agenda for the world – on the level immediately below which acquiesces to that imposition. This level then imposes the Cult will on the level below them which acquiesces and imposes on the next level. Very quickly we meet levels in the hierarchy that have no idea there even is a Cult, but the sequence of imposition and acquiescence continues down the pyramid in just the same way. 'I don't know why we are doing this but the order came from "on-high" and so we better just do it.' Alfred Lord Tennyson said of the cannon fodder levels in his poem *The Charge of the Light Brigade*: 'Theirs not to reason why; theirs but to do and die.' The next line says that 'into the valley of death rode the six hundred' and they died because they obeyed without question what their perceived 'superiors' told them to do. In the same way the population capitulated to 'Covid'. The whole hierarchical pyramid functions like this to allow the very few to direct the enormous many. Eventually imposition-acquiescence-imposition-acquiescence comes down to the mass of the population at the foot of the pyramid. If they acquiesce to those levels of the hierarchy imposing on them (governments/law enforcement/doctors/media) a circuit is completed between the population and the handful of super-psychopaths in the Cult inner core at the top of the pyramid. Without a circuit-breaking refusal to obey, the sequence of imposition and acquiescence allows a staggeringly few people to impose their will upon the entirety of humankind. We are looking at the very sequence that has subjugated billions since the start of 2020. Our freedom has not been taken from us. Humanity has given it

away. Fascists do not impose fascism because there are not enough of them. Fascism is imposed by the population acquiescing to fascism. Put another way allowing their perceptions to be programmed to the extent that leads to the population giving their freedom away by giving their perceptions – their mind – away. If this circuit is not broken by humanity ceasing to cooperate with their own enslavement then nothing can change. For that to happen people have to critically think and see through the lies and window dressing and then summon the backbone to act upon what they see. The Cult spends its days working to stop either happening and its methodology is systematic and highly detailed, but it can be overcome and that is what this book is all about.

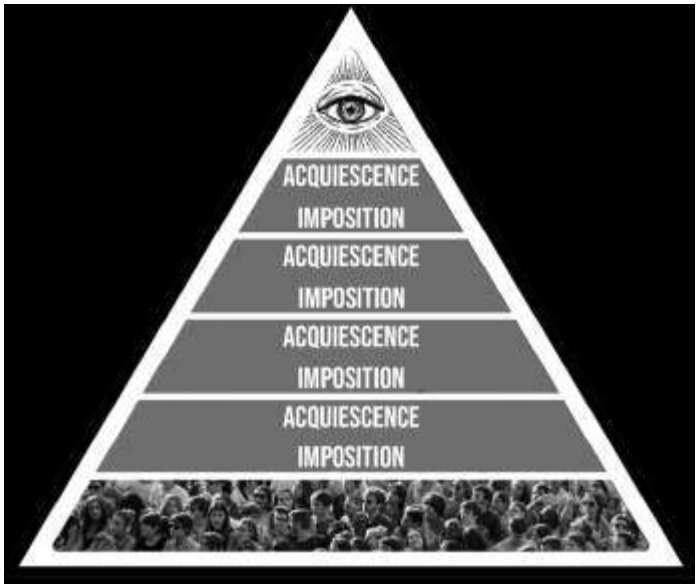

Figure 2: The simple sequence of imposition and compliance that allows a handful of people at the peak of the pyramid to dictate the lives of billions.

The Life Program

Okay, back to world number 1 or the world of the 'masses'. Observe the process of what we call 'life' and it is a perceptual download from cradle to grave. The Cult has created a global structure in which perception can be programmed and the program continually topped-up with what appears to be constant confirmation that the program is indeed true reality. The important word here is 'appears'.

This is the structure, the fly-trap, the Postage Stamp Consensus or Perceptual Mainframe, which represents that incredibly narrow band of perceived possibility delivered by the 'education' system, mainstream media, science and medicine. From the earliest age the download begins with parents who have themselves succumbed to the very programming their children are about to go through. Most parents don't do this out of malevolence and mostly it is quite the opposite. They do what they believe is best for their children and that is what the program has told them is best. Within three or four years comes the major transition from parental programming to full-blown state (Cult) programming in school, college and university where perceptually-programmed teachers and academics pass on their programming to the next generations. Teachers who resist are soon marginalised and their careers ended while children who resist are called a problem child for whom Ritalin may need to be prescribed. A few years after entering the 'world' children are under the control of authority figures representing the state telling them when they have to be there, when they can leave and when they can speak, eat, even go to the toilet. This is calculated preparation for a lifetime of obeying authority in all its forms. Reflex-action fear of authority is instilled by authority from the start. Children soon learn the carrot and stick consequences of obeying or defying authority which is underpinned daily for the rest of their life. Fortunately I daydreamed through this crap and never obeyed authority simply because it told me to. This approach to my alleged 'betters' continues to this day. There can be consequences of pursuing open-minded freedom in a world of closed-minded conformity. I spent a lot of time in school corridors after being ejected from the classroom for not taking some of it seriously and now I spend a lot of time being ejected from Facebook, YouTube and Twitter. But I can tell you that being true to yourself and not compromising your self-respect is far more exhilarating than bowing to authority for authority's sake. You don't have to be a sheep to the shepherd (authority) and the sheep dog (fear of not obeying authority).

The perceptual download continues throughout the formative years in school, college and university while script-reading 'teachers', 'academics' 'scientists', 'doctors' and 'journalists' insist that ongoing generations must be as programmed as they are. Accept the program or you will not pass your 'exams' which confirm your 'degree' of programming. It is tragic to think that many parents pressure their offspring to work hard at school to download the program and qualify for the next stage at college and university. The late, great, American comedian George Carlin said: 'Here's a bumper sticker I'd like to see: We are proud parents of a child who has resisted his teachers' attempts to break his spirit and bend him to the will of his corporate masters.' Well, the best of luck finding many of those, George. Then comes the moment to leave the formal programming years in academia and enter the 'adult' world of work. There you meet others in your chosen or prescribed arena who went through the same Postage Stamp Consensus program before you did. There is therefore overwhelming agreement between almost everyone on the basic foundations of Postage Stamp reality and the rejection, even contempt, of the few who have a mind of their own and are prepared to use it. This has two major effects. Firstly, the consensus confirms to the programmed that their download is really how things are. I mean, everyone knows that, right? Secondly, the arrogance and ignorance of Postage Stamp adherents ensure that anyone questioning the program will have unpleasant consequences for seeking their own truth and not picking their perceptions from the shelf marked: 'Things you must believe without question and if you don't you're a dangerous lunatic conspiracy theorist and a harebrained nutter'.

Every government, agency and corporation is founded on the same Postage Stamp prison cell and you can see why so many people believe the same thing while calling it their own 'opinion'. Fusion of governments and corporations in pursuit of the same agenda was the definition of fascism described by Italian dictator Benito Mussolini. The pressure to conform to perceptual norms downloaded for a lifetime is incessant and infiltrates society right

down to family groups that become censors and condemners of their own 'black sheep' for not, ironically, being sheep. We have seen an explosion of that in the 'Covid' era. Cult-owned global media unleashes its propaganda all day every day in support of the Postage Stamp and targets with abuse and ridicule anyone in the public eye who won't bend their mind to the will of the tyranny. Any response to this is denied (certainly in my case). They don't want to give a platform to expose official lies. Cult-owned-and-created Internet giants like Facebook, Google, YouTube and Twitter delete you for having an unapproved opinion. Facebook boasts that its AI censors delete 97-percent of 'hate speech' before anyone even reports it. Much of that 'hate speech' will simply be an opinion that Facebook and its masters don't want people to see. Such perceptual oppression is widely known as fascism. Even Facebook executive Benny Thomas, a 'CEO Global Planning Lead', said in comments secretly recorded by investigative journalism operation Project Veritas that Facebook is 'too powerful' and should be broken up:

I mean, no king in history has been the ruler of two billion people, but Mark Zuckerberg is … And he's 36. That's too much for a 36-year-old ... You should not have power over two billion people. I just think that's wrong.

Thomas said Facebook-owned platforms like Instagram, Oculus, and WhatsApp needed to be separate companies. 'It's too much power when they're all one together'. That's the way the Cult likes it, however. We have an executive of a Cult organisation in Benny Thomas that doesn't know there is a Cult such is the compartmentalisation. Thomas said that Facebook and Google 'are no longer companies, they're countries'. Actually they are more powerful than countries on the basis that if you control information you control perception and control human society.

I love my oppressor

Another expression of this psychological trickery is for those who realise they are being pressured into compliance to eventually

convince themselves to believe the official narratives to protect their self-respect from accepting the truth that they have succumbed to meek and subservient compliance. Such people become some of the most vehement defenders of the system. You can see them everywhere screaming abuse at those who prefer to think for themselves and by doing so reminding the compliers of their own capitulation to conformity. 'You are talking dangerous nonsense you Covidiot!!' Are you trying to convince me or yourself? It is a potent form of Stockholm syndrome which is defined as: 'A psychological condition that occurs when a victim of abuse identifies and attaches, or bonds, positively with their abuser.' An example is hostages bonding and even 'falling in love' with their kidnappers. The syndrome has been observed in domestic violence, abused children, concentration camp inmates, prisoners of war and many and various Satanic cults. These are some traits of Stockholm syndrome listed at goodtherapy.org:

- Positive regard towards perpetrators of abuse or captor [see 'Covid'].
- Failure to cooperate with police and other government authorities when it comes to holding perpetrators of abuse or kidnapping accountable [or in the case of 'Covid' cooperating with the police to enforce and defend their captors' demands].
- Little or no effort to escape [see 'Covid'].
- Belief in the goodness of the perpetrators or kidnappers [see 'Covid'].
- Appeasement of captors. This is a manipulative strategy for maintaining one's safety. As victims get rewarded – perhaps with less abuse or even with life itself – their appeasing behaviours are reinforced [see 'Covid'].
- Learned helplessness. This can be akin to 'if you can't beat 'em, join 'em'. As the victims fail to escape the abuse or captivity, they may start giving up and soon realize it's just easier for everyone if they acquiesce all their power to their captors [see 'Covid'].

- Feelings of pity toward the abusers, believing they are actually victims themselves. Because of this, victims may go on a crusade or mission to 'save' [protect] their abuser [see the venom unleashed on those challenging the official 'Covid' narrative].
- Unwillingness to learn to detach from their perpetrators and heal. In essence, victims may tend to be less loyal to themselves than to their abuser [*definitely* see 'Covid'].

Ponder on those traits and compare them with the behaviour of great swathes of the global population who have defended governments and authorities which have spent every minute destroying their lives and livelihoods and those of their children and grandchildren since early 2020 with fascistic lockdowns, house arrest and employment deletion to 'protect' them from a 'deadly virus' that their abusers' perceptually created to bring about this very outcome. We are looking at mass Stockholm syndrome. All those that agree to concede their freedom will believe those perceptions are originating in their own independent 'mind' when in fact by conceding their reality to Stockholm syndrome they have by definition conceded any independence of mind. Listen to the 'opinions' of the acquiescing masses in this 'Covid' era and what gushes forth is the repetition of the official version of everything delivered unprocessed, unfiltered and unquestioned. The whole programming dynamic works this way. I must be free because I'm told that I am and so I think that I am.

You can see what I mean with the chapter theme of 'I'm thinking – Oh, but *are* you?' The great majority are not thinking, let alone for themselves. They are repeating what authority has told them to believe which allows them to be controlled. Weaving through this mentality is the fear that the 'conspiracy theorists' are right and this again explains the often hysterical abuse that ensues when you dare to contest the official narrative of anything. Denial is the mechanism of hiding from yourself what you don't want to be true. Telling people what they want to hear is easy, but it's an infinitely greater challenge to tell them what they would rather not be happening.

One is akin to pushing against an open door while the other is met with vehement resistance no matter what the scale of evidence. I don't want it to be true so I'll convince myself that it's not. Examples are everywhere from the denial that a partner is cheating despite all the signs to the reflex-action rejection of any idea that world events in which country after country act in exactly the same way are centrally coordinated. To accept the latter is to accept that a force of unspeakable evil is working to destroy your life and the lives of your children with nothing too horrific to achieve that end. Who the heck wants that to be true? But if we don't face reality the end is duly achieved and the consequences are far worse and ongoing than breaking through the walls of denial today with the courage to make a stand against tyranny.

Connect the dots – but how?

A crucial aspect of perceptual programming is to portray a world in which everything is random and almost nothing is connected to anything else. Randomness cannot be coordinated by its very nature and once you perceive events as random the idea they could be connected is waved away as the rantings of the tinfoil-hat brigade. You can't plan and coordinate random you idiot! No, you can't, but you can hide the coldly-calculated and long-planned behind the *illusion* of randomness. A foundation manifestation of the Renegade Mind is to scan reality for patterns that connect the apparently random and turn pixels and dots into pictures. This is the way I work and have done so for more than 30 years. You look for similarities in people, modus operandi and desired outcomes and slowly, then ever quicker, the picture forms. For instance: There would seem to be no connection between the 'Covid pandemic' hoax and the human-caused global-warming hoax and yet they are masks (appropriately) on the same face seeking the same outcome. Those pushing the global warming myth through the Club of Rome and other Cult agencies are driving the lies about 'Covid' – Bill Gates is an obvious one, but they are endless. Why would the same people be involved in both when they are clearly not connected? Oh, but they

are. Common themes with personnel are matched by common goals. The 'solutions' to both 'problems' are centralisation of global power to impose the will of the few on the many to 'save' humanity from 'Covid' and save the planet from an 'existential threat' (we need 'zero Covid' and 'zero carbon emissions'). These, in turn, connect with the 'dot' of globalisation which was coined to describe the centralisation of global power in every area of life through incessant political and corporate expansion, trading blocks and superstates like the European Union. If you are the few and you want to control the many you have to centralise power and decision-making. The more you centralise power the more power the few at the centre will have over the many; and the more that power is centralised the more power those at the centre have to centralise even quicker. The momentum of centralisation gets faster and faster which is exactly the process we have witnessed. In this way the hoaxed 'pandemic' and the fakery of human-caused global warming serve the interests of globalisation and the seizure of global power in the hands of the Cult inner-circle which is behind 'Covid', 'climate change' *and* globalisation. At this point random 'dots' become a clear and obvious picture or pattern.

Klaus Schwab, the classic Bond villain who founded the Cult's Gates-funded World Economic Forum, published a book in 2020, *The Great Reset*, in which he used the 'problem' of 'Covid' to justify a total transformation of human society to 'save' humanity from 'climate change'. Schwab said: 'The pandemic represents a rare but narrow window of opportunity to reflect, reimagine, and reset our world.' What he didn't mention is that the Cult he serves is behind both hoaxes as I show in my book *The Answer*. He and the Cult don't have to reimagine the world. They know precisely what they want and that's why they destroyed human society with 'Covid' to 'build back better' in their grand design. Their job is not to imagine, but to get humanity to imagine and agree with their plans while believing it's all random. It must be pure coincidence that 'The Great Reset' has long been the Cult's code name for the global imposition of fascism and replaced previous code-names of the 'New World

Order' used by Cult frontmen like Father George Bush and the 'New Order of the Ages' which emerged from Freemasonry and much older secret societies. New Order of the Ages appears on the reverse of the Great Seal of the United States as 'Novus ordo seclorum' underneath the Cult symbol used since way back of the pyramid and all seeing-eye (Fig 3). The pyramid is the hierarchy of human control headed by the illuminated eye that symbolises the force behind the Cult which I will expose in later chapters. The term 'Annuit Coeptis' translates as 'He favours our undertaking'. We are told the 'He' is the Christian god, but 'He' is not as I will be explaining.

Figure 3: The all-seeing eye of the Cult 'god' on the Freemason-designed Great Seal of the United States and also on the dollar bill.

Having you on

Two major Cult techniques of perceptual manipulation that relate to all this are what I have called since the 1990s Problem-Reaction-Solution (PRS) and the Totalitarian Tiptoe (TT). They can be uncovered by the inquiring mind with a simple question: Who benefits? The answer usually identifies the perpetrators of a given action or happening through the concept of 'he who most benefits from a crime is the one most likely to have committed it'. The Latin 'Cue bono?' – Who benefits? – is widely attributed to the Roman orator and statesman Marcus Tullius Cicero. No wonder it goes back so far when the concept has been relevant to human behaviour since

history was recorded. Problem-Reaction-Solution is the technique used to manipulate us every day by covertly creating a problem (or the illusion of one) and offering the solution to the problem (or the illusion of one). In the first phase you create the problem and blame someone or something else for why it has happened. This may relate to a financial collapse, terrorist attack, war, global warming or pandemic, anything in fact that will allow you to impose the 'solution' to change society in the way you desire at that time. The 'problem' doesn't have to be real. PRS is manipulation of perception and all you need is the population to believe the problem is real. Human-caused global warming and the 'Covid pandemic' only have to be *perceived* to be real for the population to accept the 'solutions' of authority. I refer to this technique as NO-Problem-Reaction-Solution. Billions did not meekly accept house arrest from early 2020 because there was a real deadly 'Covid pandemic' but because they perceived – believed – that to be the case. The antidote to Problem-Reaction-Solution is to ask who benefits from the proposed solution. Invariably it will be anyone who wants to justify more control through deletion of freedom and centralisation of power and decision-making.

The two world wars were Problem-Reaction-Solutions that transformed and realigned global society. Both were manipulated into being by the Cult as I have detailed in books since the mid-1990s. They dramatically centralised global power, especially World War Two, which led to the United Nations and other global bodies thanks to the overt and covert manipulations of the Rockefeller family and other Cult bloodlines like the Rothschilds. The UN is a stalking horse for full-blown world government that I will come to shortly. The land on which the UN building stands in New York was donated by the Rockefellers and the same Cult family was behind Big Pharma scalpel and drug 'medicine' and the creation of the World Health Organization as part of the UN. They have been stalwarts of the eugenics movement and funded Hitler's race-purity expert' Ernst Rudin. The human-caused global warming hoax has been orchestrated by the Club of Rome through the UN which is

manufacturing both the 'problem' through its Intergovernmental Panel on Climate Change and imposing the 'solution' through its Agenda 21 and Agenda 2030 which demand the total centralisation of global power to 'save the world' from a climate hoax the United Nations is itself perpetrating. What a small world the Cult can be seen to be particularly among the inner circles. The bedfellow of Problem-Reaction-Solution is the Totalitarian Tiptoe which became the Totalitarian Sprint in 2020. The technique is fashioned to hide the carefully-coordinated behind the cover of apparently random events. You start the sequence at 'A' and you know you are heading for 'Z'. You don't want people to know that and each step on the journey is presented as a random happening while all the steps strung together lead in the same direction. The speed may have quickened dramatically in recent times, but you can still see the incremental approach of the Tiptoe in the case of 'Covid' as each new imposition takes us deeper into fascism. Tell people they have to do this or that to get back to 'normal', then this and this and this. With each new demand adding to the ones that went before the population's freedom is deleted until it disappears. The spider wraps its web around the flies more comprehensively with each new diktat. I'll highlight this in more detail when I get to the 'Covid' hoax and how it has been pulled off. Another prime example of the Totalitarian Tiptoe is how the Cult-created European Union went from a 'free-trade zone' to a centralised bureaucratic dictatorship through the Tiptoe of incremental centralisation of power until nations became mere administrative units for Cult-owned dark suits in Brussels.

The antidote to ignorance is knowledge which the Cult seeks vehemently to deny us, but despite the systematic censorship to that end the Renegade Mind can overcome this by vociferously seeking out the facts no matter the impediments put in the way. There is also a method of thinking and perceiving – *knowing* – that doesn't even need names, dates, place-type facts to identify the patterns that reveal the story. I'll get to that in the final chapter. All you need to know about the manipulation of human society and to what end is still out there – *at the time of writing* – in the form of books, videos

and websites for those that really want to breach the walls of programmed perception. To access this knowledge requires the abandonment of the mainstream media as a source of information in the awareness that this is owned and controlled by the Cult and therefore promotes mass perceptions that suit the Cult. Mainstream media lies all day, every day. That is its function and very reason for being. Where it does tell the truth, here and there, is only because the truth and the Cult agenda very occasionally coincide. If you look for fact and insight to the BBC, CNN and virtually all the rest of them you are asking to be conned and perceptually programmed.

Know the outcome and you'll see the journey

Events seem random when you have no idea where the world is being taken. Once you do the random becomes the carefully planned. Know the outcome and you'll see the journey is a phrase I have been using for a long time to give context to daily happenings that appear unconnected. Does a problem, or illusion of a problem, trigger a proposed 'solution' that further drives society in the direction of the outcome? Invariably the answer will be yes and the random – *abracadabra* – becomes the clearly coordinated. So what is this outcome that unlocks the door to a massively expanded understanding of daily events? I will summarise its major aspects – the fine detail is in my other books – and those new to this information will see that the world they thought they were living in is a very different place. The foundation of the Cult agenda is the incessant centralisation of power and all such centralisation is ultimately in pursuit of Cult control on a global level. I have described for a long time the planned world structure of top-down dictatorship as the Hunger Games Society. The term obviously comes from the movie series which portrayed a world in which a few living in military-protected hi-tech luxury were the overlords of a population condemned to abject poverty in isolated 'sectors' that were not allowed to interact. 'Covid' lockdowns and travel bans anyone? The 'Hunger Games' pyramid of structural control has the inner circle of the Cult at the top with pretty much the entire

population at the bottom under their control through dependency for survival on the Cult. The whole structure is planned to be protected and enforced by a military-police state (Fig 4).

Here you have the reason for the global lockdowns of the fake pandemic to coldly destroy independent incomes and livelihoods and make everyone dependent on the 'state' (the Cult that controls the 'states'). I have warned in my books for many years about the plan to introduce a 'guaranteed income' – a barely survivable pittance – designed to impose dependency when employment was destroyed by AI technology and now even more comprehensively at great speed by the 'Covid' scam. Once the pandemic was played and lockdown consequences began to delete independent income the authorities began to talk right on cue about the need for a guaranteed income and a 'Great Reset'. Guaranteed income will be presented as benevolent governments seeking to help a desperate people – desperate as a direct result of actions of the same governments. The truth is that such payments are a trap. You will only get them if you do exactly what the authorities demand including mass vaccination (genetic manipulation). We have seen this theme already in Australia where those dependent on government benefits have them reduced if parents don't agree to have their children vaccinated according to an insane health-destroying government-dictated schedule. Calculated economic collapse applies to governments as well as people. The Cult wants rid of countries through the creation of a world state with countries broken up into regions ruled by a world government and super states like the European Union. Countries must be bankrupted, too, to this end and it's being achieved by the trillions in 'rescue packages' and furlough payments, trillions in lost taxation, and money-no-object spending on 'Covid' including constant all-medium advertising (programming) which has made the media dependent on government for much of its income. The day of reckoning is coming – as planned – for government spending and given that it has been made possible by printing money and not by production/taxation there is inflation on the way that has the

potential to wipe out monetary value. In that case there will be no need for the Cult to steal your money. It just won't be worth anything (see the German Weimar Republic before the Nazis took over). Many have been okay with lockdowns while getting a percentage of their income from so-called furlough payments without having to work. Those payments are dependent, however, on people having at least a theoretical job with a business considered non-essential and ordered to close. As these business go under because they are closed by lockdown after lockdown the furlough stops and it will for everyone eventually. Then what? The 'then what?' is precisely the idea.

THE COVID-19 CREATED HUNGER GAMES SOCIETY
THE ELITE - 1%
THE GLOBAL POLICE STATE
MANDATORY VACCINATION - ID - SOCIAL CREDIT - 666
CLOSED
FOOD BANK
THE MASSES LIVING IN POVERTY

Figure 4: The Hunger Games Society structure I have long warned was planned and now the 'Covid' hoax has made it possible. This is the real reason for lockdowns.

Hired hands

Between the Hunger Games Cult elite and the dependent population is planned to be a vicious military-police state (a fusion of the two into one force). This has been in the making for a long time with police looking ever more like the military and carrying weapons to match. The pandemic scam has seen this process accelerate so fast as

lockdown house arrest is brutally enforced by carefully recruited fascist minds and gormless system-servers. The police and military are planned to merge into a centrally-directed world army in a global structure headed by a world government which wouldn't be elected even by the election fixes now in place. The world army is not planned even to be human and instead wars would be fought, primarily against the population, using robot technology controlled by artificial intelligence. I have been warning about this for decades and now militaries around the world are being transformed by this very AI technology. The global regime that I describe is a particular form of fascism known as a technocracy in which decisions are not made by clueless and co-opted politicians but by unelected technocrats – scientists, engineers, technologists and bureaucrats. Cult-owned-and-controlled Silicon Valley giants are examples of technocracy and they already have far more power to direct world events than governments. They are with their censorship *selecting* governments. I know that some are calling the 'Great Reset' a Marxist communist takeover, but fascism and Marxism are different labels for the same tyranny. Tell those who lived in fascist Germany and Stalinist Russia that there was a difference in the way their freedom was deleted and their lives controlled. I could call it a fascist technocracy or a Marxist technocracy and they would be equally accurate. The Hunger Games society with its world government structure would oversee a world army, world central bank and single world cashless currency imposing its will on a microchipped population (Fig 5). Scan its different elements and see how the illusory pandemic is forcing society in this very direction at great speed. Leaders of 23 countries and the World Health Organization (WHO) backed the idea in March, 2021, of a global treaty for 'international cooperation' in 'health emergencies' and nations should 'come together as a global community for peaceful cooperation that extends beyond this crisis'. Cut the Orwellian bullshit and this means another step towards global government. The plan includes a cashless digital money system that I first warned about in 1993. Right at the start of 'Covid' the deeply corrupt Tedros

Adhanom Ghebreyesus, the crooked and merely gofer 'head' of the World Health Organization, said it was possible to catch the 'virus' by touching cash and it was better to use cashless means. The claim was ridiculous nonsense and like the whole 'Covid' mind-trick it was nothing to do with 'health' and everything to do with pushing every aspect of the Cult agenda. As a result of the Tedros lie the use of cash has plummeted. The Cult script involves a single world digital currency that would eventually be technologically embedded in the body. China is a massive global centre for the Cult and if you watch what is happening there you will know what is planned for everywhere. The Chinese government is developing a digital currency which would allow fines to be deducted immediately via AI for anyone caught on camera breaking its fantastic list of laws and the money is going to be programmable with an expiry date to ensure that no one can accrue wealth except the Cult and its operatives.

WORLD GOVERNMENT
UNELECTED - RUN BY TECHNOCRATS
WORLD ARMY • CENTRAL BANK • CURRENCY •
HUMANS CONNECTED TO A.I.
SUPERSTATES LIKE THE EU AND CENTRALLY
CONTROLLED 'TRADING BLOCS'
COUNTRIES REPLACED BY POWERLESS REGIONS
GLOBAL MONOCULTURE
THE PEOPLE

Figure 5: The structure of global control the Cult has been working towards for so long and this has been enormously advanced by the 'Covid' illusion.

Serfdom is so smart

The Cult plan is far wider, extreme, and more comprehensive than even most conspiracy researchers appreciate and I will come to the true depths of deceit and control in the chapters 'Who controls the

Cult?' and 'Escaping Wetiko'. Even the world that we know is crazy enough. We are being deluged with ever more sophisticated and controlling technology under the heading of 'smart'. We have smart televisions, smart meters, smart cards, smart cars, smart driving, smart roads, smart pills, smart patches, smart watches, smart skin, smart borders, smart pavements, smart streets, smart cities, smart communities, smart environments, smart growth, smart planet ... smart *everything* around us. Smart technologies and methods of operation are designed to interlock to create a global Smart Grid connecting the entirety of human society including human minds to create a centrally-dictated 'hive' mind. 'Smart cities' is code for densely-occupied megacities of total surveillance and control through AI. Ever more destructive frequency communication systems like 5G have been rolled out without any official testing for health and psychological effects (colossal). 5G/6G/7G systems are needed to run the Smart Grid and each one becomes more destructive of body and mind. Deleting independent income is crucial to forcing people into these AI-policed prisons by ending private property ownership (except for the Cult elite). The Cult's Great Reset now openly foresees a global society in which no one will own any possessions and everything will be rented while the Cult would own literally everything under the guise of government and corporations. The aim has been to use the lockdowns to destroy sources of income on a mass scale and when the people are destitute and in unrepayable amounts of debt (problem) Cult assets come forward with the pledge to write-off debt in return for handing over all property and possessions (solution). Everything – literally everything including people – would be connected to the Internet via AI. I was warning years ago about the coming Internet of Things (IoT) in which all devices and technology from your car to your fridge would be plugged into the Internet and controlled by AI. Now we are already there with much more to come. The next stage is the Internet of Everything (IoE) which is planned to include the connection of AI to the human brain and body to replace the human mind with a centrally-controlled AI mind. Instead of perceptions

being manipulated through control of information and censorship those perceptions would come direct from the Cult through AI. What do you think? You think whatever AI decides that you think. In human terms there would be no individual 'think' any longer. Too incredible? The ravings of a lunatic? Not at all. Cult-owned crazies in Silicon Valley have been telling us the plan for years without explaining the real motivation and calculated implications. These include Google executive and 'futurist' Ray Kurzweil who highlights the year 2030 for when this would be underway. He said:

Our thinking ... will be a hybrid of biological and non-biological thinking ... humans will be able to extend their limitations and 'think in the cloud' ... We're going to put gateways to the cloud in our brains ... We're going to gradually merge and enhance ourselves ... In my view, that's the nature of being human – we transcend our limitations.

As the technology becomes vastly superior to what we are then the small proportion that is still human gets smaller and smaller and smaller until it's just utterly negligible.

The sales-pitch of Kurzweil and Cult-owned Silicon Valley is that this would make us 'super-human' when the real aim is to make us post-human and no longer 'human' in the sense that we have come to know. The entire global population would be connected to AI and become the centrally-controlled 'hive-mind' of externally-delivered perceptions. The Smart Grid being installed to impose the Cult's will on the world is being constructed to allow particular locations – even one location – to control the whole global system. From these prime control centres, which absolutely include China and Israel, anything connected to the Internet would be switched on or off and manipulated at will. Energy systems could be cut, communication via the Internet taken down, computer-controlled driverless autonomous vehicles driven off the road, medical devices switched off, the potential is limitless given how much AI and Internet connections now run human society. We have seen nothing yet if we allow this to continue. Autonomous vehicle makers are working with law enforcement to produce cars designed to automatically pull over if they detect a police or emergency vehicle flashing from up to 100 feet away. At a police stop the car would be unlocked and the

window rolled down automatically. Vehicles would only take you where the computer (the state) allowed. The end of petrol vehicles and speed limiters on all new cars in the UK and EU from 2022 are steps leading to electric computerised transport over which ultimately you have no control. The picture is far bigger even than the Cult global network or web and that will become clear when I get to the nature of the 'spider'. There is a connection between all these happenings and the instigation of DNA-manipulating 'vaccines' (which aren't 'vaccines') justified by the 'Covid' hoax. That connection is the unfolding plan to transform the human body from a biological to a synthetic biological state and this is why synthetic biology is such a fast-emerging discipline of mainstream science. 'Covid vaccines' are infusing self-replicating synthetic genetic material into the cells to cumulatively take us on the Totalitarian Tiptoe from Human 1.0 to the synthetic biological Human 2.0 which will be physically and perceptually attached to the Smart Grid to one hundred percent control every thought, perception and deed. Humanity needs to wake up and *fast*.

This is the barest explanation of where the 'outcome' is planned to go but it's enough to see the journey happening all around us. Those new to this information will already see 'Covid' in a whole new context. I will add much more detail as we go along, but for the minutiae evidence see my mega-works, *The Answer, The Trigger* and *Everything You Need to Know But Have Never Been Told*.

Now – how does a Renegade Mind see the 'world'?

CHAPTER TWO

Renegade Perception

It is one thing to be clever and another to be wise
George R.R. Martin

A simple definition of the difference between a programmed mind and a Renegade Mind would be that one sees only dots while the other connects them to see the picture. Reading reality with accuracy requires the observer to (a) know the planned outcome and (b) realise that everything, but *everything*, is connected.

The entirety of infinite reality is connected – that's its very nature – and with human society an expression of infinite reality the same must apply. Simple cause and effect is a connection. The effect is triggered by the cause and the effect then becomes the cause of another effect. Nothing happens in isolation because it *can't*. Life in whatever reality is simple choice and consequence. We make choices and these lead to consequences. If we don't like the consequences we can make different choices and get different consequences which lead to other choices and consequences. The choice and the consequence are not only connected they are indivisible. You can't have one without the other as an old song goes. A few cannot control the world unless those being controlled allow that to happen – cause and effect, choice and consequence. Control – who has it and who doesn't – is a two-way process, a symbiotic relationship, involving the controller and controlled. 'They took my freedom away!!' Well, yes, but you also gave it to them. Humanity is

subjected to mass control because humanity has acquiesced to that control. This is all cause and effect and literally a case of give and take. In the same way world events of every kind are connected and the Cult works incessantly to sell the illusion of the random and coincidental to maintain the essential (to them) perception of dots that hide the picture. Renegade Minds know this and constantly scan the world for patterns of connection. This is absolutely pivotal in understanding the happenings in the world and without that perspective clarity is impossible. First you know the planned outcome and then you identify the steps on the journey – the day-by-day apparently random which, when connected in relation to the outcome, no longer appear as individual events, but as the proverbial *chain* of events leading in the same direction. I'll give you some examples:

Political puppet show

We are told to believe that politics is 'adversarial' in that different parties with different beliefs engage in an endless tussle for power. There may have been some truth in that up to a point – and only a point – but today divisions between 'different' parties are rhetorical not ideological. Even the rhetorical is fusing into one-speak as the parties eject any remaining free thinkers while others succumb to the ever-gathering intimidation of anyone with the 'wrong' opinion. The Cult is not a new phenomenon and can be traced back thousands of years as my books have documented. Its intergenerational initiates have been manipulating events with increasing effect the more that global power has been centralised. In ancient times the Cult secured control through the system of monarchy in which 'special' bloodlines (of which more later) demanded the right to rule as kings and queens simply by birthright and by vanquishing others who claimed the same birthright. There came a time, however, when people had matured enough to see the unfairness of such tyranny and demanded a say in who governed them. Note the word – *governed* them. Not served them – *governed* them, hence government defined as 'the political direction and control exercised over the

actions of the members, citizens, or inhabitants of communities, societies, and states; direction of the affairs of a state, community, etc.' Governments exercise control over rather than serve just like the monarchies before them. Bizarrely there are still countries like the United Kingdom which are ruled by a monarch *and* a government that officially answers to the monarch. The UK head of state and that of Commonwealth countries such as Canada, Australia and New Zealand is 'selected' by who in a *single family* had unprotected sex with whom and in what order. Pinch me it can't be true. Ouch! Shit, it is. The demise of monarchies in most countries offered a potential vacuum in which some form of free and fair society could arise and the Cult had that base covered. Monarchies had served its interests but they couldn't continue in the face of such widespread opposition and, anyway, replacing a 'royal' dictatorship that people could see with a dictatorship 'of the people' hiding behind the concept of 'democracy' presented far greater manipulative possibilities and ways of hiding coordinated tyranny behind the illusion of 'freedom'.

Democracy is quite wrongly defined as government selected by the population. This is not the case at all. It is government selected by *some* of the population (and then only in theory). This 'some' doesn't even have to be the majority as we have seen so often in first-past-the-post elections in which the so-called majority party wins fewer votes than the 'losing' parties combined. Democracy can give total power to a party in government from a minority of the votes cast. It's a sleight of hand to sell tyranny as freedom. Seventy-four million Trump-supporting Americans didn't vote for the 'Democratic' Party of Joe Biden in the distinctly dodgy election in 2020 and yet far from acknowledging the wishes and feelings of that great percentage of American society the Cult-owned Biden government set out from day one to destroy them and their right to a voice and opinion. Empty shell Biden and his Cult handlers said they were doing this to 'protect democracy'. Such is the level of lunacy and sickness to which politics has descended. Connect the dots and relate them to the desired outcome – a world government run by self-appointed technocrats and no longer even elected

politicians. While operating through its political agents in government the Cult is at the same time encouraging public distain for politicians by putting idiots and incompetents in theoretical power on the road to deleting them. The idea is to instil a public reaction that says of the technocrats: 'Well, they couldn't do any worse than the pathetic politicians.' It's all about controlling perception and Renegade Minds can see through that while programmed minds cannot when they are ignorant of both the planned outcome and the manipulation techniques employed to secure that end. This knowledge can be learned, however, and fast if people choose to get informed.

Politics may at first sight appear very difficult to control from a central point. I mean look at the 'different' parties and how would you be able to oversee them all and their constituent parts? In truth, it's very straightforward because of their structure. We are back to the pyramid of imposition and acquiescence. Organisations are structured in the same way as the system as a whole. Political parties are not open forums of free expression. They are hierarchies. I was a national spokesman for the British Green Party which claimed to be a different kind of politics in which influence and power was devolved; but I can tell you from direct experience – and it's far worse now – that Green parties are run as hierarchies like all the others however much they may try to hide that fact or kid themselves that it's not true. A very few at the top of all political parties are directing policy and personnel. They decide if you are elevated in the party or serve as a government minister and to do that you have to be a yes man or woman. Look at all the maverick political thinkers who never ascended the greasy pole. If you want to progress within the party or reach 'high-office' you need to fall into line and conform. Exceptions to this are rare indeed. Should you want to run for parliament or Congress you have to persuade the local or state level of the party to select you and for that you need to play the game as dictated by the hierarchy. If you secure election and wish to progress within the greater structure you need to go on conforming to what is acceptable to those running the hierarchy

from the peak of the pyramid. Political parties are perceptual gulags and the very fact that there are party 'Whips' appointed to 'whip' politicians into voting the way the hierarchy demands exposes the ridiculous idea that politicians are elected to serve the people they are supposed to represent. Cult operatives and manipulation has long seized control of major parties that have any chance of forming a government and at least most of those that haven't. A new party forms and the Cult goes to work to infiltrate and direct. This has reached such a level today that you see video compilations of 'leaders' of all parties whether Democrats, Republicans, Conservative, Labour and Green parroting the same Cult mantra of 'Build Back Better' and the 'Great Reset' which are straight off the Cult song-sheet to describe the transformation of global society in response to the Cult-instigated hoaxes of the 'Covid pandemic' and human-caused 'climate change'. To see Caroline Lucas, the Green Party MP that I knew when I was in the party in the 1980s, speaking in support of plans proposed by Cult operative Klaus Schwab representing the billionaire global elite is a real head-shaker.

Many parties – one master

The party system is another mind-trick and was instigated to change the nature of the dictatorship by swapping 'royalty' for dark suits that people believed – though now ever less so – represented their interests. Understanding this trick is to realise that a single force (the Cult) controls all parties either directly in terms of the major ones or through manipulation of perception and ideology with others. You don't need to manipulate Green parties to demand your transformation of society in the name of 'climate change' when they are obsessed with the lie that this is essential to 'save the planet'. You just give them a platform and away they go serving your interests while believing they are being environmentally virtuous. America's political structure is a perfect blueprint for how the two or multi-party system is really a one-party state. The Republican Party is controlled from one step back in the shadows by a group made up of billionaires and their gofers known as neoconservatives or Neocons.

I have exposed them in fine detail in my books and they were the driving force behind the policies of the imbecilic presidency of Boy George Bush which included 9/11 (see *The Trigger* for a comprehensive demolition of the official story), the subsequent 'war on terror' (war *of* terror) and the invasions of Afghanistan and Iraq. The latter was a No-Problem-Reaction-Solution based on claims by Cult operatives, including Bush and British Prime Minister Tony Blair, about Saddam Hussein's 'weapons of mass destruction' which did not exist as war criminals Bush and Blair well knew.

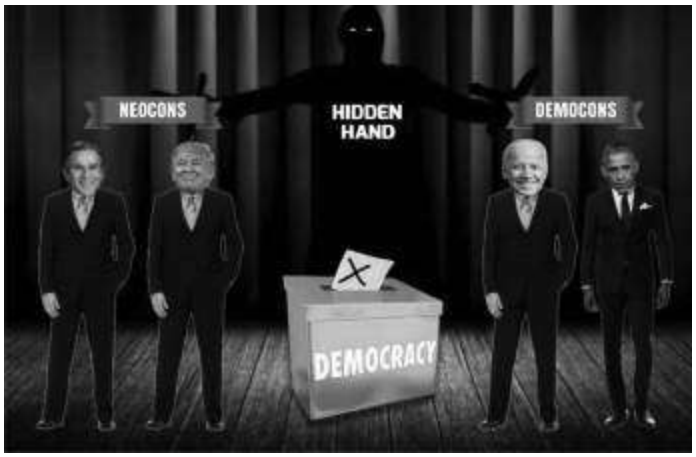

Figure 6: Different front people, different parties – same control system.

The Democratic Party has its own 'Neocon' group controlling from the background which I call the 'Democons' and here's the penny-drop – the Neocons and Democons answer to the same masters one step further back into the shadows (Fig 6). At that level of the Cult the Republican and Democrat parties are controlled by the same people and no matter which is in power the Cult is in power. This is how it works in almost every country and certainly in Britain with Conservative, Labour, Liberal Democrat and Green parties now all on the same page whatever the rhetoric may be in their feeble attempts to appear different. Neocons operated at the time of Bush through a think tank called The Project for the New American Century which in September, 2000, published a document entitled *Rebuilding America's Defenses: Strategies, Forces, and Resources*

For a New Century demanding that America fight 'multiple, simultaneous major theatre wars' as a 'core mission' to force regime-change in countries including Iraq, Libya and Syria. Neocons arranged for Bush ('Republican') and Blair ('Labour Party') to front-up the invasion of Iraq and when they departed the Democons orchestrated the targeting of Libya and Syria through Barack Obama ('Democrat') and British Prime Minister David Cameron ('Conservative Party'). We have 'different' parties and 'different' people, but the same unfolding script. The more the Cult has seized the reigns of parties and personnel the more their policies have transparently pursued the same agenda to the point where the fascist 'Covid' impositions of the Conservative junta of Jackboot Johnson in Britain were opposed by the Labour Party because they were not fascist enough. The Labour Party is likened to the US Democrats while the Conservative Party is akin to a British version of the Republicans and on both sides of the Atlantic they all speak the same language and support the direction demanded by the Cult although some more enthusiastically than others. It's a similar story in country after country because it's all centrally controlled. Oh, but what about Trump? I'll come to him shortly. Political 'choice' in the 'party' system goes like this: You vote for Party A and they get into government. You don't like what they do so next time you vote for Party B and they get into government. You don't like what they do when it's pretty much the same as Party A and why wouldn't that be with both controlled by the same force? Given that only two, sometimes three, parties have any chance of forming a government to get rid of Party B that you don't like you have to vote again for Party A which … you don't like. This, ladies and gentlemen, is what they call 'democracy' which we are told – wrongly – is a term interchangeable with 'freedom'.

The cult of cults

At this point I need to introduce a major expression of the Global Cult known as Sabbatian-Frankism. Sabbatian is also spelt as Sabbatean. I will summarise here. I have published major exposés

and detailed background in other works. Sabbatian-Frankism combines the names of two frauds posing as 'Jewish' men, Sabbatai Zevi (1626-1676), a rabbi, black magician and occultist who proclaimed he was the Jewish messiah; and Jacob Frank (1726-1791), the Polish 'Jew', black magician and occultist who said he was the reincarnation of 'messiah' Zevi and biblical patriarch Jacob. They worked across two centuries to establish the Sabbatian-Frankist cult that plays a major, indeed central, role in the manipulation of human society by the Global Cult which has its origins much further back in history than Sabbatai Zevi. I should emphasise two points here in response to the shrill voices that will scream 'anti-Semitism': (1) Sabbatian-Frankists are NOT Jewish and only pose as such to hide their cult behind a Jewish façade; and (2) my information about this cult has come from Jewish sources who have long realised that their society and community has been infiltrated and taken over by interloper Sabbatian-Frankists. Infiltration has been the foundation technique of Sabbatian-Frankism from its official origin in the 17th century. Zevi's Sabbatian sect attracted a massive following described as the biggest messianic movement in Jewish history, spreading as far as Africa and Asia, and he promised a return for the Jews to the 'Promised Land' of Israel. Sabbatianism was not Judaism but an inversion of everything that mainstream Judaism stood for. So much so that this sinister cult would have a feast day when Judaism had a fast day and whatever was forbidden in Judaism the Sabbatians were encouraged and even commanded to do. This included incest and what would be today called Satanism. Members were forbidden to marry outside the sect and there was a system of keeping their children ignorant of what they were part of until they were old enough to be trusted not to unknowingly reveal anything to outsiders. The same system is employed to this day by the Global Cult in general which Sabbatian-Frankism has enormously influenced and now largely controls.

Zevi and his Sabbatians suffered a setback with the intervention by the Sultan of the Islamic Ottoman Empire in the Middle East and what is now the Republic of Turkey where Zevi was located. The

Sultan gave him the choice of proving his 'divinity', converting to Islam or facing torture and death. Funnily enough Zevi chose to convert or at least appear to. Some of his supporters were disillusioned and drifted away, but many did not with 300 families also converting – only in theory – to Islam. They continued behind this Islamic smokescreen to follow the goals, rules and rituals of Sabbatianism and became known as 'crypto-Jews' or the 'Dönmeh' which means 'to turn'. This is rather ironic because they didn't 'turn' and instead hid behind a fake Islamic persona. The process of appearing to be one thing while being very much another would become the calling card of Sabbatianism especially after Zevi's death and the arrival of the Satanist Jacob Frank in the 18th century when the cult became Sabbatian-Frankism and plumbed still new depths of depravity and infiltration which included – still includes – human sacrifice and sex with children. Wherever Sabbatians go paedophilia and Satanism follow and is it really a surprise that Hollywood is so infested with child abuse and Satanism when it was established by Sabbatian-Frankists and is still controlled by them? Hollywood has been one of the prime vehicles for global perceptual programming and manipulation. How many believe the version of 'history' portrayed in movies when it is a travesty and inversion (again) of the truth? Rabbi Marvin Antelman describes Frankism in his book, *To Eliminate the Opiate*, as 'a movement of complete evil' while Jewish professor Gershom Scholem said of Frank in *The Messianic Idea in Judaism*: 'In all his actions [he was] a truly corrupt and degenerate individual ... one of the most frightening phenomena in the whole of Jewish history.' Frank was excommunicated by traditional rabbis, as was Zevi, but Frank was undeterred and enjoyed vital support from the House of Rothschild, the infamous banking dynasty whose inner-core are Sabbatian-Frankists and not Jews. Infiltration of the Roman Church and Vatican was instigated by Frank with many Dönmeh 'turning' again to convert to Roman Catholicism with a view to hijacking the reins of power. This was the ever-repeating modus operandi and continues to be so. Pose as an advocate of the religion, culture or country that you want to control and then

manipulate your people into the positions of authority and influence largely as advisers, administrators and Svengalis for those that appear to be in power. They did this with Judaism, Christianity (Christian Zionism is part of this), Islam and other religions and nations until Sabbatian-Frankism spanned the world as it does today.

Sabbatian Saudis and the terror network

One expression of the Sabbatian-Frankist Dönmeh within Islam is the ruling family of Saudi Arabia, the House of Saud, through which came the vile distortion of Islam known as Wahhabism. This is the violent creed followed by terrorist groups like Al-Qaeda and ISIS or Islamic State. Wahhabism is the hand-chopping, head-chopping 'religion' of Saudi Arabia which is used to keep the people in a constant state of fear so the interloper House of Saud can continue to rule. Al-Qaeda and Islamic State were lavishly funded by the House of Saud while being created and directed by the Sabbatian-Frankist network in the United States that operates through the Pentagon, CIA and the government in general of whichever 'party'. The front man for the establishment of Wahhabism in the middle of the 18th century was a Sabbatian-Frankist 'crypto-Jew' posing as Islamic called Muhammad ibn Abd al-Wahhab. His daughter would marry the son of Muhammad bin Saud who established the first Saudi state before his death in 1765 with support from the British Empire. Bin Saud's successors would establish modern Saudi Arabia in league with the British and Americans in 1932 which allowed them to seize control of Islam's major shrines in Mecca and Medina. They have dictated the direction of Sunni Islam ever since while Iran is the major centre of the Shiite version and here we have the source of at least the public conflict between them. The Sabbatian network has used its Wahhabi extremists to carry out Problem-Reaction-Solution terrorist attacks in the name of 'Al-Qaeda' and 'Islamic State' to justify a devastating 'war on terror', ever-increasing surveillance of the population and to terrify people into compliance. Another insight of the Renegade Mind is the streetwise understanding that

just because a country, location or people are attacked doesn't mean that those apparently representing that country, location or people are not behind the attackers. Often they are *orchestrating* the attacks because of the societal changes that can be then justified in the name of 'saving the population from terrorists'.

I show in great detail in *The Trigger* how Sabbatian-Frankists were the real perpetrators of 9/11 and not '19 Arab hijackers' who were blamed for what happened. Observe what was justified in the name of 9/11 alone in terms of Middle East invasions, mass surveillance and control that fulfilled the demands of the Project for the New American Century document published by the Sabbatian Neocons. What appear to be enemies are on the deep inside players on the same Sabbatian team. Israel and Arab 'royal' dictatorships are all ruled by Sabbatians and the recent peace agreements between Israel and Saudi Arabia, the United Arab Emirates (UAE) and others are only making formal what has always been the case behind the scenes. Palestinians who have been subjected to grotesque tyranny since Israel was bombed and terrorised into existence in 1948 have never stood a chance. Sabbatian-Frankists have controlled Israel (so the constant theme of violence and war which Sabbatians love) and they have controlled the Arab countries that Palestinians have looked to for real support that never comes. 'Royal families' of the Arab world in Saudi Arabia, Bahrain, UAE, etc., are all Sabbatians with allegiance to the aims of the cult and not what is best for their Arabic populations. They have stolen the oil and financial resources from their people by false claims to be 'royal dynasties' with a genetic right to rule and by employing vicious militaries to impose their will.

Satanic 'illumination'

The Satanist Jacob Frank formed an alliance in 1773 with two other Sabbatians, Mayer Amschel Rothschild (1744-1812), founder of the Rothschild banking dynasty, and Jesuit-educated fraudulent Jew, Adam Weishaupt, and this led to the formation of the Bavarian Illuminati, firstly under another name, in 1776. The Illuminati would

be the manipulating force behind the French Revolution (1789-1799) and was also involved in the American Revolution (1775-1783) before and after the Illuminati's official creation. Weishaupt would later become (in public) a Protestant Christian in archetypal Sabbatian style. I read that his name can be decoded as Adam-Weishaupt or 'the first man to lead those who know'. He wasn't a leader in the sense that he was a subordinate, but he did lead those below him in a crusade of transforming human society that still continues today. The theme was confirmed as early as 1785 when a horseman courier called Lanz was reported to be struck by lighting and extensive Illuminati documents were found in his saddlebags. They made the link to Weishaupt and detailed the plan for world takeover. Current events with 'Covid' fascism have been in the making for a very long time. Jacob Frank was jailed for 13 years by the Catholic Inquisition after his arrest in 1760 and on his release he headed for Frankfurt, Germany, home city and headquarters of the House of Rothschild where the alliance was struck with Mayer Amschel Rothschild and Weishaupt. Rothschild arranged for Frank to be given the title of Baron and he became a wealthy nobleman with a big following of Jews in Germany, the Austro-Hungarian Empire and other European countries. Most of them would have believed he was on their side.

The name 'Illuminati' came from the Zohar which is a body of works in the Jewish mystical 'bible' called the Kabbalah. 'Zohar' is the foundation of Sabbatian-Frankist belief and in Hebrew 'Zohar' means 'splendour', 'radiance', 'illuminated', and so we have 'Illuminati'. They claim to be the 'Illuminated Ones' from their knowledge systematically hidden from the human population and passed on through generations of carefully-chosen initiates in the global secret society network or Cult. Hidden knowledge includes an awareness of the Cult agenda for the world and the nature of our collective reality that I will explore later. Cult 'illumination' is symbolised by the torch held by the Statue of Liberty which was gifted to New York by French Freemasons in Paris who knew exactly what it represents. 'Liberty' symbolises the goddess worshipped in

Babylon as Queen Semiramis or Ishtar. The significance of this will become clear. Notice again the ubiquitous theme of inversion with the Statue of 'Liberty' really symbolising mass control (Fig 7). A mirror-image statute stands on an island in the River Seine in Paris from where New York Liberty originated (Fig 8). A large replica of the Liberty flame stands on top of the Pont de l'Alma tunnel in Paris where Princess Diana died in a Cult ritual described in *The Biggest Secret*. Lucifer 'the light bringer' is related to all this (and much more as we'll see) and 'Lucifer' is a central figure in Sabbatian-Frankism and its associated Satanism. Sabbatians reject the Jewish Torah, or Pentateuch, the 'five books of Moses' in the Old Testament known as Genesis, Exodus, Leviticus, Numbers, and Deuteronomy which are claimed by Judaism and Christianity to have been dictated by 'God' to Moses on Mount Sinai. Sabbatians say these do not apply to them and they seek to replace them with the Zohar to absorb Judaism and its followers into their inversion which is an expression of a much greater global inversion. They want to delete all religions and force humanity to worship a one-world religion – Sabbatian Satanism that also includes worship of the Earth goddess. Satanic themes are being more and more introduced into mainstream society and while Christianity is currently the foremost target for destruction the others are planned to follow.

Figure 7: The Cult goddess of Babylon disguised as the Statue of Liberty holding the flame of Lucifer the 'light bringer'.

Figure 8: Liberty's mirror image in Paris where the New York version originated.

Marx brothers

Rabbi Marvin Antelman connects the Illuminati to the Jacobins in *To Eliminate the Opiate* and Jacobins were the force behind the French Revolution. He links both to the Bund der Gerechten, or League of the Just, which was the network that inflicted communism/Marxism on the world. Antelman wrote:

> The original inner circle of the Bund der Gerechten consisted of born Catholics, Protestants and Jews [Sabbatian-Frankist infiltrators], and those representatives of respective subdivisions formulated schemes for the ultimate destruction of their faiths. The heretical Catholics laid plans which they felt would take a century or more for the ultimate destruction of the church; the apostate Jews for the ultimate destruction of the Jewish religion.

Sabbatian-created communism connects into this anti-religion agenda in that communism does not allow for the free practice of religion. The Sabbatian 'Bund' became the International Communist Party and Communist League and in 1848 'Marxism' was born with the Communist Manifesto of Sabbatian assets Karl Marx and Friedrich Engels. It is absolutely no coincidence that Marxism, just a different name for fascist and other centrally-controlled tyrannies, is being imposed worldwide as a result of the 'Covid' hoax and nor that Marxist/fascist China was the place where the hoax originated. The reason for this will become very clear in the chapter 'Covid: The calculated catastrophe'. The so-called 'Woke' mentality has hijacked

traditional beliefs of the political left and replaced them with far-right make-believe 'social justice' better known as Marxism. Woke will, however, be swallowed by its own perceived 'revolution' which is really the work of billionaires and billionaire corporations feigning being 'Woke'. Marxism is being touted by Wokers as a replacement for 'capitalism' when we don't have 'capitalism'. We have cartelism in which the market is stitched up by the very Cult billionaires and corporations bankrolling Woke. Billionaires love Marxism which keeps the people in servitude while they control from the top. Terminally naïve Wokers think they are 'changing the world' when it's the Cult that is doing the changing and when they have played their vital part and become surplus to requirements they, too, will be targeted. The Illuminati-Jacobins were behind the period known as 'The Terror' in the French Revolution in 1793 and 1794 when Jacobin Maximillian de Robespierre and his Orwellian 'Committee of Public Safety' killed 17,000 'enemies of the Revolution' who had once been 'friends of the Revolution'. Karl Marx (1818-1883), whose Sabbatian creed of Marxism has cost the lives of at least 100 million people, is a hero once again to Wokers who have been systematically kept ignorant of real history by their 'education' programming. As a result they now promote a Sabbatian 'Marxist' abomination destined at some point to consume them. Rabbi Antelman, who spent decades researching the Sabbatian plot, said of the League of the Just and Karl Marx:

> Contrary to popular opinion Karl Marx did not originate the Communist Manifesto. He was paid for his services by the League of the Just, which was known in its country of origin, Germany, as the Bund der Geaechteten.

Antelman said the text attributed to Marx was the work of other people and Marx 'was only repeating what others already said'. Marx was 'a hired hack – lackey of the wealthy Illuminists'. Marx famously said that religion was the 'opium of the people' (part of the Sabbatian plan to demonise religion) and Antelman called his books, *To Eliminate the Opiate*. Marx was born Jewish, but his family converted to Christianity (Sabbatian modus operandi) and he

attacked Jews, not least in his book, *A World Without Jews*. In doing so he supported the Sabbatian plan to destroy traditional Jewishness and Judaism which we are clearly seeing today with the vindictive targeting of orthodox Jews by the Sabbatian government of Israel over 'Covid' laws. I don't follow any religion and it has done much damage to the world over centuries and acted as a perceptual straightjacket. Renegade Minds, however, are always asking *why* something is being done. It doesn't matter if they agree or disagree with what is happening – *why* is it happening is the question. The 'why?' can be answered with regard to religion in that religions create interacting communities of believers when the Cult wants to dismantle all discourse, unity and interaction (see 'Covid' lockdowns) and the ultimate goal is to delete all religions for a one-world religion of Cult Satanism worshipping their 'god' of which more later. We see the same 'why?' with gun control in America. I don't have guns and don't want them, but why is the Cult seeking to disarm the population at the same time that law enforcement agencies are armed to their molars and why has every tyrant in history sought to disarm people before launching the final takeover? They include Hitler, Stalin, Pol Pot and Mao who followed confiscation with violent seizing of power. You know it's a Cult agenda by the people who immediately race to the microphones to exploit dead people in multiple shootings. Ultra-Zionist Cult lackey Senator Chuck Schumer was straight on the case after ten people were killed in Boulder, Colorado in March, 2121. Simple rule … if Schumer wants it the Cult wants it and the same with his ultra-Zionist mate the wild-eyed Senator Adam Schiff. At the same time they were calling for the disarmament of Americans, many of whom live a long way from a police response, Schumer, Schiff and the rest of these pampered clowns were sitting on Capitol Hill behind a razor-wired security fence protected by thousands of armed troops in addition to their own armed bodyguards. Mom and pop in an isolated home? They're just potential mass shooters.

Zion Mainframe

Sabbatian-Frankists and most importantly the Rothschilds were behind the creation of 'Zionism', a political movement that demanded a Jewish homeland in Israel as promised by Sabbatai Zevi. The very symbol of Israel comes from the German meaning of the name Rothschild. Dynasty founder Mayer Amschel Rothschild changed the family name from Bauer to Rothschild, or 'Red-Shield' in German, in deference to the six-pointed 'Star of David' hexagram displayed on the family's home in Frankfurt. The symbol later appeared on the flag of Israel after the Rothschilds were centrally involved in its creation. Hexagrams are not a uniquely Jewish symbol and are widely used in occult ('hidden') networks often as a symbol for Saturn (see my other books for why). Neither are Zionism and Jewishness interchangeable. Zionism is a political movement and philosophy and not a 'race' or a people. Many Jews oppose Zionism and many non-Jews, including US President Joe Biden, call themselves Zionists as does Israel-centric Donald Trump. America's support for the Israel government is pretty much a gimme with ultra-Zionist billionaires and corporations providing fantastic and dominant funding for both political parties. Former Congresswoman Cynthia McKinney has told how she was approached immediately she ran for office to 'sign the pledge' to Israel and confirm that she would always vote in that country's best interests. All American politicians are approached in this way. Anyone who refuses will get no support or funding from the enormous and all-powerful Zionist lobby that includes organisations like mega-lobby group AIPAC, the American Israel Public Affairs Committee. Trump's biggest funder was ultra-Zionist casino and media billionaire Sheldon Adelson while major funders of the Democratic Party include ultra-Zionist George Soros and ultra-Zionist financial and media mogul, Haim Saban. Some may reel back at the suggestion that Soros is an Israel-firster (Sabbatian-controlled Israel-firster), but Renegade Minds watch the actions not the words and everywhere Soros donates his billions the Sabbatian agenda benefits. In the spirit of Sabbatian inversion Soros pledged $1 billion for a new university network to promote 'liberal values and tackle intolerance'. He made the announcement during his annual speech

at the Cult-owned World Economic Forum in Davos, Switzerland, in January, 2020, after his 'harsh criticism' of 'authoritarian rulers' around the world. You can only laugh at such brazen mendacity. How *he* doesn't laugh is the mystery. Translated from the Orwellian 'liberal values and tackle intolerance' means teaching non-white people to hate white people and for white people to loathe themselves for being born white. The reason for that will become clear.

The 'Anti-Semitism' fraud

Zionists support the Jewish homeland in the land of Palestine which has been the Sabbatian-Rothschild goal for so long, but not for the benefit of Jews. Sabbatians and their global Anti-Semitism Industry have skewed public and political opinion to equate opposing the violent extremes of Zionism to be a blanket attack and condemnation of all Jewish people. Sabbatians and their global Anti-Semitism Industry have skewed public and political opinion to equate opposing the violent extremes of Zionism to be a blanket attack and condemnation of all Jewish people. This is nothing more than a Sabbatian protection racket to stop legitimate investigation and exposure of their agendas and activities. The official definition of 'anti-Semitism' has more recently been expanded to include criticism of Zionism – a *political movement* – and this was done to further stop exposure of Sabbatian infiltrators who created Zionism as we know it today in the 19th century. Renegade Minds will talk about these subjects when they know the shit that will come their way. People must decide if they want to know the truth or just cower in the corner in fear of what others will say. Sabbatians have been trying to label me as 'anti-Semitic' since the 1990s as I have uncovered more and more about their background and agendas. Useless, gutless, fraudulent 'journalists' then just repeat the smears without question and on the day I was writing this section a pair of unquestioning repeaters called Ben Quinn and Archie Bland (how appropriate) outright called me an 'anti-Semite' in the establishment propaganda sheet, the London *Guardian*, with no supporting evidence. The

Sabbatian Anti-Semitism Industry said so and who are they to question that? They wouldn't dare. Ironically 'Semitic' refers to a group of languages in the Middle East that are almost entirely Arabic. 'Anti-Semitism' becomes 'anti-Arab' which if the consequences of this misunderstanding were not so grave would be hilarious. Don't bother telling Quinn and Bland. I don't want to confuse them, bless 'em. One reason I am dubbed 'anti-Semitic' is that I wrote in the 1990s that Jewish operatives (Sabbatians) were heavily involved in the Russian Revolution when Sabbatians overthrew the Romanov dynasty. This apparently made me 'anti-Semitic'. Oh, really? Here is a section from *The Trigger*:

British journalist Robert Wilton confirmed these themes in his 1920 book *The Last Days of the Romanovs* when he studied official documents from the Russian government to identify the members of the Bolshevik ruling elite between 1917 and 1919. The Central Committee included 41 Jews among 62 members; the Council of the People's Commissars had 17 Jews out of 22 members; and 458 of the 556 most important Bolshevik positions between 1918 and 1919 were occupied by Jewish people. Only 17 were Russian. Then there were the 23 Jews among the 36 members of the vicious Cheka Soviet secret police established in 1917 who would soon appear all across the country.

Professor Robert Service of Oxford University, an expert on 20th century Russian history, found evidence that ['Jewish'] Leon Trotsky had sought to make sure that Jews were enrolled in the Red Army and were disproportionately represented in the Soviet civil bureaucracy that included the Cheka which performed mass arrests, imprisonment and executions of 'enemies of the people'. A US State Department Decimal File (861.00/5339) dated November 13th, 1918, names [Rothschild banking agent in America] Jacob Schiff and a list of ultra-Zionists as funders of the Russian Revolution leading to claims of a 'Jewish plot', but the key point missed by all is they were not 'Jews' – they were Sabbatian-Frankists.

Britain's Winston Churchill made the same error by mistake or otherwise. He wrote in a 1920 edition of the *Illustrated Sunday Herald* that those behind the Russian revolution were part of a 'worldwide conspiracy for the overthrow of civilisation and for the reconstitution of society on the basis of arrested development, of envious malevolence, and impossible equality' (see 'Woke' today because that has been created by the same network). Churchill said there was no need to exaggerate the part played in the creation of Bolshevism and in the actual bringing about of the Russian

Revolution 'by these international and for the most part atheistical Jews' ['atheistical Jews' = Sabbatians]. Churchill said it is certainly a very great one and probably outweighs all others: 'With the notable exception of Lenin, the majority of the leading figures are Jews.' He went on to describe, knowingly or not, the Sabbatian modus operandi of placing puppet leaders nominally in power while they control from the background:

> Moreover, the principal inspiration and driving power comes from the Jewish leaders. Thus Tchitcherin, a pure Russian, is eclipsed by his nominal subordinate, Litvinoff, and the influence of Russians like Bukharin or Lunacharski cannot be compared with the power of Trotsky, or of Zinovieff, the Dictator of the Red Citadel (Petrograd), or of Krassin or Radek – all Jews. In the Soviet institutions the predominance of Jews is even more astonishing. And the prominent, if not indeed the principal, part in the system of terrorism applied by the Extraordinary Commissions for Combatting Counter-Revolution has been taken by Jews, and in some notable cases by Jewesses.

What I said about seriously disproportionate involvement in the Russian Revolution by Jewish 'revolutionaries' (Sabbatians) is provable fact, but truth is no defence against the Sabbatian Anti-Semitism Industry, its repeater parrots like Quinn and Bland, and the now breathtaking network of so-called 'Woke' 'anti-hate' groups with interlocking leaderships and funding which have the role of discrediting and silencing anyone who gets too close to exposing the Sabbatians. We have seen 'truth is no defence' confirmed in legal judgements with the Saskatchewan Human Rights Commission in Canada decreeing this: 'Truthful statements can be presented in a manner that would meet the definition of hate speech, and not all truthful statements must be free from restriction.' Most 'anti-hate' activists, who are themselves consumed by hatred, are too stupid and ignorant of the world to know how they are being used. They are far too far up their own virtue-signalling arses and it's far too dark for them to see anything.

The 'revolution' game

The background and methods of the 'Russian' Revolution are straight from the Sabbatian playbook seen in the French Revolution

and endless others around the world that appear to start as a revolution of the people against tyrannical rule and end up with a regime change to more tyrannical rule overtly or covertly. Wars, terror attacks and regime overthrows follow the Sabbatian cult through history with its agents creating them as Problem-Reaction-Solutions to remove opposition on the road to world domination. Sabbatian dots connect the Rothschilds with the Illuminati, Jacobins of the French Revolution, the 'Bund' or League of the Just, the International Communist Party, Communist League and the Communist Manifesto of Karl Marx and Friedrich Engels that would lead to the Rothschild-funded Russian Revolution. The sequence comes under the heading of 'creative destruction' when you advance to your global goal by continually destroying the status quo to install a new status quo which you then also destroy. The two world wars come to mind. With each new status quo you move closer to your planned outcome. Wars and mass murder are to Sabbatians a collective blood sacrifice ritual. They are obsessed with death for many reasons and one is that death is an inversion of life. Satanists and Sabbatians are obsessed with death and often target churches and churchyards for their rituals. Inversion-obsessed Sabbatians explain the use of inverted symbolism including the *inverted* pentagram and *inverted* cross. The inversion of the cross has been related to targeting Christianity, but the cross was a religious symbol long before Christianity and its inversion is a statement about the Sabbatian mentality and goals more than any single religion.

Sabbatians operating in Germany were behind the rise of the occult-obsessed Nazis and the subsequent Jewish exodus from Germany and Europe to Palestine and the United States after World War Two. The Rothschild dynasty was at the forefront of this both as political manipulators and by funding the operation. Why would Sabbatians help to orchestrate the horrors inflicted on Jews by the Nazis and by Stalin after they organised the Russian Revolution? Sabbatians hate Jews and their religion, that's why. They pose as Jews and secure positions of control within Jewish society and play the 'anti-Semitism' card to protect themselves from exposure

through a global network of organisations answering to the Sabbatian-created-and-controlled globe-spanning intelligence network that involves a stunning web of military-intelligence operatives and operations for a tiny country of just nine million. Among them are Jewish assets who are not Sabbatians but have been convinced by them that what they are doing is for the good of Israel and the Jewish community to protect them from what they have been programmed since childhood to believe is a Jew-hating hostile world. The Jewish community is just a highly convenient cover to hide the true nature of Sabbatians. Anyone getting close to exposing their game is accused by Sabbatian place-people and gofers of 'anti-Semitism' and claiming that all Jews are part of a plot to take over the world. I am not saying that. I am saying that Sabbatians – the *real* Jew-haters – have infiltrated the Jewish community to use them both as a cover and an 'anti-Semitic' defence against exposure. Thus we have the Anti-Semitism Industry targeted researchers in this way and most Jewish people think this is justified and genuine. They don't know that their 'Jewish' leaders and institutions of state, intelligence and military are not controlled by Jews at all, but cultists and stooges of Sabbatian-Frankism. I once added my name to a pro-Jewish freedom petition online and the next time I looked my name was gone and text had been added to the petition blurb to attack me as an 'anti-Semite' such is the scale of perceptual programming.

Moving on America

I tell the story in *The Trigger* and a chapter called 'Atlantic Crossing' how particularly after Israel was established the Sabbatians moved in on the United States and eventually grasped control of government administration, the political system via both Democrats and Republicans, the intelligence community like the CIA and National Security Agency (NSA), the Pentagon and mass media. Through this seriously compartmentalised network Sabbatians and their operatives in Mossad, Israeli Defense Forces (IDF) and US agencies pulled off 9/11 and blamed it on 19 'Al-Qaeda hijackers' dominated by men from, or connected to, Sabbatian-ruled Saudi

Arabia. The '19' were not even on the planes let alone flew those big passenger jets into buildings while being largely incompetent at piloting one-engine light aircraft. 'Hijacker' Hani Hanjour who is said to have flown American Airlines Flight 77 into the Pentagon with a turn and manoeuvre most professional pilots said they would have struggled to do was banned from renting a small plane by instructors at the Freeway Airport in Bowie, Maryland, just *six weeks* earlier on the grounds that he was an incompetent pilot. The Jewish population of the world is just 0.2 percent with even that almost entirely concentrated in Israel (75 percent Jewish) and the United States (around two percent). This two percent and globally 0.2 percent refers to *Jewish* people and not Sabbatian interlopers who are a fraction of that fraction. What a sobering thought when you think of the fantastic influence on world affairs of tiny Israel and that the Project for the New America Century (PNAC) which laid out the blueprint in September, 2000, for America's war on terror and regime change wars in Iraq, Libya and Syria was founded and dominated by Sabbatians known as 'Neocons'. The document conceded that this plan would not be supported politically or publicly without a major attack on American soil and a Problem-Reaction-Solution excuse to send troops to war across the Middle East. Sabbatian Neocons said:

> ... [The] process of transformation ... [war and regime change] ... is likely to be a long one, absent some catastrophic and catalysing event – like a new Pearl Harbor.

Four months later many of those who produced that document came to power with their inane puppet George Bush from the long-time Sabbatian Bush family. They included Sabbatian Dick Cheney who was officially vice-president, but really de-facto president for the entirety of the 'Bush' government. Nine months after the 'Bush' inauguration came what Bush called at the time 'the Pearl Harbor of the 21st century' and with typical Sabbatian timing and symbolism 2001 was the 60th anniversary of the attack in 1941 by the Japanese Air Force on Pearl Harbor, Hawaii, which allowed President Franklin Delano Roosevelt to take the United States into a Sabbatian-

instigated Second World War that he said in his election campaign that he never would. The evidence is overwhelming that Roosevelt and his military and intelligence networks knew the attack was coming and did nothing to stop it, but they did make sure that America's most essential naval ships were not in Hawaii at the time. Three thousand Americans died in the Pearl Harbor attacks as they did on September 11th. By the 9/11 year of 2001 Sabbatians had widely infiltrated the US government, military and intelligence operations and used their compartmentalised assets to pull off the 'Al-Qaeda' attacks. If you read *The Trigger* it will blow your mind to see the utterly staggering concentration of 'Jewish' operatives (Sabbatian infiltrators) in essential positions of political, security, legal, law enforcement, financial and business power before, during, and after the attacks to make them happen, carry them out, and then cover their tracks – and I do mean *staggering* when you think of that 0.2 percent of the world population and two percent of Americans which are Jewish while Sabbatian infiltrators are a fraction of that. A central foundation of the 9/11 conspiracy was the hijacking of government, military, Air Force and intelligence computer systems in real time through 'back-door' access made possible by Israeli (Sabbatian) 'cyber security' software. Sabbatian-controlled Israel is on the way to rivalling Silicon Valley for domination of cyberspace and is becoming the dominant force in cyber-security which gives them access to entire computer systems and their passcodes across the world. Then add to this that Zionists head (officially) Silicon Valley giants like Google (Larry Page and Sergey Brin), Google-owned YouTube (Susan Wojcicki), Facebook (Mark Zuckerberg and Sheryl Sandberg), and Apple (Chairman Arthur D. Levinson), and that ultra-Zionist hedge fund billionaire Paul Singer has a $1 billion stake in Twitter which is only nominally headed by 'CEO' pothead Jack Dorsey. As cable news host Tucker Carlson said of Dorsey: 'There used to be debate in the medical community whether dropping a ton of acid had permanent effects and I think that debate has now ended.' Carlson made the comment after Dorsey told a hearing on Capitol Hill (if you cut through his bullshit) that he

believed in free speech so long as he got to decide what you can hear and see. These 'big names' of Silicon Valley are only front men and women for the Global Cult, not least the Sabbatians, who are the true controllers of these corporations. Does anyone still wonder why these same people and companies have been ferociously censoring and banning people (like me) for exposing any aspect of the Cult agenda and especially the truth about the 'Covid' hoax which Sabbatians have orchestrated?

The Jeffrey Epstein paedophile ring was a Sabbatian operation. He was officially 'Jewish' but he was a Sabbatian and women abused by the ring have told me about the high number of 'Jewish' people involved. The Epstein horror has Sabbatian written all over it and matches perfectly their modus operandi and obsession with sex and ritual. Epstein was running a Sabbatian blackmail ring in which famous people with political and other influence were provided with young girls for sex while everything was being filmed and recorded on hidden cameras and microphones at his New York house, Caribbean island and other properties. Epstein survivors have described this surveillance system to me and some have gone public. Once the famous politician or other figure knew he or she was on video they tended to do whatever they were told. Here we go again …when you've got them by the balls their hearts and minds will follow. Sabbatians use this blackmail technique on a wide scale across the world to entrap politicians and others they need to act as demanded. Epstein's private plane, the infamous 'Lolita Express', had many well-known passengers including Bill Clinton while Bill Gates has flown on an Epstein plane and met with him four years after Epstein had been jailed for paedophilia. They subsequently met many times at Epstein's home in New York according to a witness who was there. Epstein's infamous side-kick was Ghislaine Maxwell, daughter of Mossad agent and ultra-Zionist mega-crooked British businessman, Bob Maxwell, who at one time owned the *Daily Mirror* newspaper. Maxwell was murdered at sea on his boat in 1991 by Sabbatian-controlled Mossad when he became a liability with his

business empire collapsing as a former Mossad operative has confirmed (see *The Trigger*).

Money, money, money, funny money …

Before I come to the Sabbatian connection with the last three US presidents I will lay out the crucial importance to Sabbatians of controlling banking and finance. Sabbatian Mayer Amschel Rothschild set out to dominate this arena in his family's quest for total global control. What is freedom? It is, in effect, choice. The more choices you have the freer you are and the fewer your choices the more you are enslaved. In the global structure created over centuries by Sabbatians the biggest decider and restrictor of choice is … money. Across the world if you ask people what they would like to do with their lives and why they are not doing that they will reply 'I don't have the money'. This is the idea. A global elite of multi-billionaires are described as 'greedy' and that is true on one level; but control of money – who has it and who doesn't – is not primarily about greed. It's about control. Sabbatians have seized ever more control of finance and sucked the wealth of the world out of the hands of the population. We talk now, after all, about the 'One-percent' and even then the wealthiest are a lot fewer even than that. This has been made possible by a money scam so outrageous and so vast it could rightly be called the scam of scams founded on creating 'money' out of nothing and 'loaning' that with interest to the population. Money out of nothing is called 'credit'. Sabbatians have asserted control over governments and banking ever more completely through the centuries and secured financial laws that allow banks to lend hugely more than they have on deposit in a confidence trick known as fractional reserve lending. Imagine if you could lend money that doesn't exist and charge the recipient interest for doing so. You would end up in jail. Bankers by contrast end up in mansions, private jets, Malibu and Monaco.

Banks are only required to keep a fraction of their deposits and wealth in their vaults and they are allowed to lend 'money' they don't have called 'credit. Go into a bank for a loan and if you succeed

the banker will not move any real wealth into your account. They will type into your account the amount of the agreed 'loan' – say £100,000. This is not wealth that really exists; it is non-existent, fresh-air, created-out-of-nothing 'credit' which has never, does not, and will never exist except in theory. Credit is backed by nothing except wind and only has buying power because people think that it has buying power and accept it in return for property, goods and services. I have described this situation as like those cartoon characters you see chasing each other and when they run over the edge of a cliff they keep running forward on fresh air until one of them looks down, realises what's happened, and they all crash into the ravine. The whole foundation of the Sabbatian financial system is to stop people looking down except for periodic moments when they want to crash the system (as in 2008 and 2020 ongoing) and reap the rewards from all the property, businesses and wealth their borrowers had signed over as 'collateral' in return for a 'loan' of fresh air. Most people think that money is somehow created by governments when it comes into existence from the start as a debt through banks 'lending' illusory money called credit. Yes, the very currency of exchange is a *debt* from day one issued as an interest-bearing loan. Why don't governments create money interest-free and lend it to their people interest-free? Governments are controlled by Sabbatians and the financial system is controlled by Sabbatians for whom interest-free money would be a nightmare come true. Sabbatians underpin their financial domination through their global network of central banks, including the privately-owned US Federal Reserve and Britain's Bank of England, and this is orchestrated by a privately-owned central bank coordination body called the Bank for International Settlements in Basle, Switzerland, created by the usual suspects including the Rockefellers and Rothschilds. Central bank chiefs don't answer to governments or the people. They answer to the Bank for International Settlements or, in other words, the Global Cult which is dominated today by Sabbatians.

Built-in disaster

There are so many constituent scams within the overall banking scam. When you take out a loan of thin-air credit only the amount of that loan is theoretically brought into circulation to add to the amount in circulation; but you are paying back the principle plus interest. The additional interest is not created and this means that with every 'loan' there is a shortfall in the money in circulation between what is borrowed and what has to be paid back. There is never even close to enough money in circulation to repay all outstanding public and private debt including interest. Coldly weaved in the very fabric of the system is the certainty that some will lose their homes, businesses and possessions to the banking 'lender'. This is less obvious in times of 'boom' when the amount of money in circulation (and the debt) is expanding through more people wanting and getting loans. When a downturn comes and the money supply contracts it becomes painfully obvious that there is not enough money to service all debt and interest. This is less obvious in times of 'boom' when the amount of money in circulation (and the debt) is expanding through more people wanting and getting loans. When a downturn comes and the money supply contracts and it becomes painfully obvious – as in 2008 and currently – that there is not enough money to service all debt and interest. Sabbatian banksters have been leading the human population through a calculated series of booms (more debt incurred) and busts (when the debt can't be repaid and the banks get the debtor's tangible wealth in exchange for non-existent 'credit'). With each 'bust' Sabbatian bankers have absorbed more of the world's tangible wealth and we end up with the One-percent. Governments are in bankruptcy levels of debt to the same system and are therefore owned by a system they do not control. The Federal Reserve, 'America's central bank', is privately-owned and American presidents only nominally appoint its chairman or woman to maintain the illusion that it's an arm of government. It's not. The 'Fed' is a cartel of private banks which handed billions to its associates and friends after the crash of 2008 and has been Sabbatian-controlled since it was manipulated into being in 1913 through the covert trickery of Rothschild banking agents Jacob Schiff and Paul

Warburg, and the Sabbatian Rockefeller family. Somehow from a Jewish population of two-percent and globally 0.2 percent (Sabbatian interlopers remember are far smaller) ultra-Zionists headed the Federal Reserve for 31 years between 1987 and 2018 in the form of Alan Greenspan, Bernard Bernanke and Janet Yellen (now Biden's Treasury Secretary) with Yellen's deputy chairman a Israeli-American duel citizen and ultra-Zionist Stanley Fischer, a former governor of the Bank of Israel. Ultra-Zionist Fed chiefs spanned the presidencies of Ronald Reagan ('Republican'), Father George Bush ('Republican'), Bill Clinton ('Democrat'), Boy George Bush ('Republican') and Barack Obama ('Democrat'). We should really add the pre-Greenspan chairman, Paul Adolph Volcker, 'appointed' by Jimmy Carter ('Democrat') who ran the Fed between 1979 and 1987 during the Carter and Reagan administrations before Greenspan took over. Volcker was a long-time associate and business partner of the Rothschilds. No matter what the 'party' officially in power the United States economy was directed by the same force. Here are members of the Obama, Trump and Biden administrations and see if you can make out a common theme.

Barack Obama ('Democrat')

Ultra-Zionists Robert Rubin, Larry Summers, and Timothy Geithner ran the US Treasury in the Clinton administration and two of them reappeared with Obama. Ultra-Zionist Fed chairman Alan Greenspan had manipulated the crash of 2008 through deregulation and jumped ship just before the disaster to make way for ultra-Zionist Bernard Bernanke to hand out trillions to Sabbatian 'too big to fail' banks and businesses, including the ubiquitous ultra-Zionist Goldman Sachs which has an ongoing staff revolving door operation between itself and major financial positions in government worldwide. Obama inherited the fallout of the crash when he took office in January, 2009, and fortunately he had the support of his ultra-Zionist White House Chief of Staff Rahm Emmanuel, son of a terrorist who helped to bomb Israel into being in 1948, and his ultra-Zionist senior adviser David Axelrod, chief strategist in Obama's two

successful presidential campaigns. Emmanuel, later mayor of Chicago and former senior fundraiser and strategist for Bill Clinton, is an example of the Sabbatian policy after Israel was established of migrating insider families to America so their children would be born American citizens. 'Obama' chose this financial team throughout his administration to respond to the Sabbatian-instigated crisis:

Timothy Geithner (ultra-Zionist) Treasury Secretary; Jacob J. Lew, Treasury Secretary; Larry Summers (ultra-Zionist), director of the White House National Economic Council; Paul Adolph Volcker (Rothschild business partner), chairman of the Economic Recovery Advisory Board; Peter Orszag (ultra-Zionist), director of the Office of Management and Budget overseeing all government spending; Penny Pritzker (ultra-Zionist), Commerce Secretary; Jared Bernstein (ultra-Zionist), chief economist and economic policy adviser to Vice President Joe Biden; Mary Schapiro (ultra-Zionist), chair of the Securities and Exchange Commission (SEC); Gary Gensler (ultra-Zionist), chairman of the Commodity Futures Trading Commission (CFTC); Sheila Bair (ultra-Zionist), chair of the Federal Deposit Insurance Corporation (FDIC); Karen Mills (ultra-Zionist), head of the Small Business Administration (SBA); Kenneth Feinberg (ultra-Zionist), Special Master for Executive [bail-out] Compensation. Feinberg would be appointed to oversee compensation (with strings) to 9/11 victims and families in a campaign to stop them having their day in court to question the official story. At the same time ultra-Zionist Bernard Bernanke was chairman of the Federal Reserve and these are only some of the ultra-Zionists with allegiance to Sabbatian-controlled Israel in the Obama government. Obama's biggest corporate donor was ultra-Zionist Goldman Sachs which had employed many in his administration.

Donald Trump ('Republican')

Trump claimed to be an outsider (he wasn't) who had come to 'drain the swamp'. He embarked on this goal by immediately appointing ultra-Zionist Steve Mnuchin, a Goldman Sachs employee for 17

years, as his Treasury Secretary. Others included Gary Cohn (ultra-Zionist), chief operating officer of Goldman Sachs, his first Director of the National Economic Council and chief economic adviser, who was later replaced by Larry Kudlow (ultra-Zionist). Trump's senior adviser throughout his four years in the White House was his sinister son-in-law Jared Kushner, a life-long friend of Israel Prime Minister Benjamin Netanyahu. Kushner is the son of a convicted crook who was pardoned by Trump in his last days in office. Other ultra-Zionists in the Trump administration included: Stephen Miller, Senior Policy Adviser; Avrahm Berkowitz, Deputy Adviser to Trump and his Senior Adviser Jared Kushner; Ivanka Trump, Adviser to the President, who converted to Judaism when she married Jared Kushner; David Friedman, Trump lawyer and Ambassador to Israel; Jason Greenblatt, Trump Organization executive vice president and chief legal officer, who was made Special Representative for International Negotiations and the Israeli-Palestinian Conflict; Rod Rosenstein, Deputy Attorney General; Elliot Abrams, Special Representative for Venezuela, then Iran; John Eisenberg, National Security Council Legal Adviser and Deputy Council to the President for National Security Affairs; Anne Neuberger, Deputy National Manager, National Security Agency; Ezra Cohen-Watnick, Acting Under Secretary of Defense for Intelligence; Elan Carr, Special Envoy to monitor and combat anti-Semitism; Len Khodorkovsky, Deputy Special Envoy to monitor and combat anti-Semitism; Reed Cordish, Assistant to the President, Intragovernmental and Technology Initiatives. Trump Vice President Mike Pence and Secretary of State Mike Pompeo, both Christian Zionists, were also vehement supporters of Israel and its goals and ambitions.

Donald 'free-speech believer' Trump pardoned a number of financial and violent criminals while ignoring calls to pardon Julian Assange and Edward Snowden whose crimes are revealing highly relevant information about government manipulation and corruption and the widespread illegal surveillance of the American people by US 'security' agencies. It's so good to know that Trump is on the side of freedom and justice and not mega-criminals with

allegiance to Sabbatian-controlled Israel. These included a pardon for Israeli spy Jonathan Pollard who was jailed for life in 1987 under the Espionage Act. Aviem Sella, the Mossad agent who recruited Pollard, was also pardoned by Trump while Assange sat in jail and Snowden remained in exile in Russia. Sella had 'fled' (was helped to escape) to Israel in 1987 and was never extradited despite being charged under the Espionage Act. A Trump White House statement said that Sella's clemency had been 'supported by Benjamin Netanyahu, Ron Dermer, Israel's US Ambassador, David Friedman, US Ambassador to Israel and Miriam Adelson, wife of leading Trump donor Sheldon Adelson who died shortly before. Other friends of Jared Kushner were pardoned along with Sholom Weiss who was believed to be serving the longest-ever white-collar prison sentence of more than 800 years in 2000. The sentence was commuted of Ponzi-schemer Eliyahu Weinstein who defrauded Jews and others out of $200 million. I did mention that Assange and Snowden were ignored, right? Trump gave Sabbatians almost everything they asked for in military and political support, moving the US Embassy from Tel Aviv to Jerusalem with its critical symbolic and literal implications for Palestinian statehood, and the 'deal of the Century' designed by Jared Kushner and David Friedman which gave the Sabbatian Israeli government the green light to substantially expand its already widespread program of building illegal Jewish-only settlements in the occupied land of the West Bank. This made a two-state 'solution' impossible by seizing all the land of a potential Palestinian homeland and that had been the plan since 1948 and then 1967 when the Arab-controlled Gaza Strip, West Bank, Sinai Peninsula and Syrian Golan Heights were occupied by Israel. All the talks about talks and road maps and delays have been buying time until the West Bank was physically occupied by Israeli real estate. Trump would have to be a monumentally ill-informed idiot not to see that this was the plan he was helping to complete. The Trump administration was in so many ways the Kushner administration which means the Netanyahu administration which means the Sabbatian administration. I understand why many opposing Cult fascism in all its forms gravitated to Trump, but he

was a crucial part of the Sabbatian plan and I will deal with this in the next chapter.

Joe Biden ('Democrat')

A barely cognitive Joe Biden took over the presidency in January, 2021, along with his fellow empty shell, Vice-President Kamala Harris, as the latest Sabbatian gofers to enter the White House. Names on the door may have changed and the 'party' – the force behind them remained the same as Zionists were appointed to a stream of pivotal areas relating to Sabbatian plans and policy. They included: Janet Yellen, Treasury Secretary, former head of the Federal Reserve, and still another ultra-Zionist running the US Treasury after Mnuchin (Trump), Lew and Geithner (Obama), and Summers and Rubin (Clinton); Anthony Blinken, Secretary of State; Wendy Sherman, Deputy Secretary of State (so that's 'Biden's' Sabbatian foreign policy sorted); Jeff Zients, White House coronavirus coordinator; Rochelle Walensky, head of the Centers for Disease Control; Rachel Levine, transgender deputy health secretary (that's 'Covid' hoax policy under control); Merrick Garland, Attorney General; Alejandro Mayorkas, Secretary of Homeland Security; Cass Sunstein, Homeland Security with responsibility for new immigration laws; Avril Haines, Director of National Intelligence; Anne Neuberger, National Security Agency cybersecurity director (note, cybersecurity); David Cohen, CIA Deputy Director; Ronald Klain, Biden's Chief of Staff (see Rahm Emanuel); Eric Lander, a 'leading geneticist', Office of Science and Technology Policy director (see Smart Grid, synthetic biology agenda); Jessica Rosenworcel, acting head of the Federal Communications Commission (FCC) which controls Smart Grid technology policy and electromagnetic communication systems including 5G. How can it be that so many pivotal positions are held by two-percent of the American population and 0.2 percent of the world population administration after administration no matter who is the president and what is the party? It's a coincidence? Of course it's not and this is why Sabbatians have built their colossal global web of interlocking 'anti-

hate' hate groups to condemn anyone who asks these glaring questions as an 'anti-Semite'. The way that Jewish people horrifically abused in Sabbatian-backed Nazi Germany are exploited to this end is stomach-turning and disgusting beyond words.

Political fusion

Sabbatian manipulation has reversed the roles of Republicans and Democrats and the same has happened in Britain with the Conservative and Labour Parties. Republicans and Conservatives were always labelled the 'right' and Democrats and Labour the 'left', but look at the policy positions now and the Democrat-Labour 'left' has moved further to the 'right' than Republicans and Conservatives under the banner of 'Woke', the Cult-created far-right tyranny. Where once the Democrat-Labour 'left' defended free speech and human rights they now seek to delete them and as I said earlier despite the 'Covid' fascism of the Jackboot Johnson Conservative government in the UK the Labour Party of leader Keir Starmer demanded even more extreme measures. The Labour Party has been very publicly absorbed by Sabbatians after a political and media onslaught against the previous leader, the weak and inept Jeremy Corbyn, over made-up allegations of 'anti-Semitism' both by him and his party. The plan was clear with this 'anti-Semite' propaganda and what was required in response was a swift and decisive 'fuck off' from Corbyn and a statement to expose the Anti-Semitism Industry (Sabbatian) attempt to silence Labour criticism of the Israeli government (Sabbatians) and purge the party of all dissent against the extremes of ultra-Zionism (Sabbatians). Instead Corbyn and his party fell to their knees and appeased the abusers which, by definition, is impossible. Appeasing one demand leads only to a new demand to be appeased until takeover is complete. Like I say – 'fuck off' would have been a much more effective policy and I have used it myself with great effect over the years when Sabbatians are on my case which is most of the time. I consider that fact a great compliment, by the way. The outcome of the Labour Party capitulation is that we now have a Sabbatian-controlled

Conservative Party 'opposed' by a Sabbatian-controlled Labour Party in a one-party Sabbatian state that hurtles towards the extremes of tyranny (the Sabbatian cult agenda). In America the situation is the same. Labour's Keir Starmer spends his days on his knees with his tongue out pointing to Tel Aviv, or I guess now Jerusalem, while Boris Johnson has an 'anti-Semitism czar' in the form of former Labour MP John Mann who keeps Starmer company on his prayer mat.

Sabbatian influence can be seen in Jewish members of the Labour Party who have been ejected for criticism of Israel including those from families that suffered in Nazi Germany. Sabbatians despise real Jewish people and target them even more harshly because it is so much more difficult to dub them 'anti-Semitic' although in their desperation they do try.

CHAPTER THREE

The Pushbacker sting

Until you realize how easy it is for your mind to be manipulated, you remain the puppet of someone else's game
Evita Ochel

I will use the presidencies of Trump and Biden to show how the manipulation of the one-party state plays out behind the illusion of political choice across the world. No two presidencies could – on the face of it – be more different and apparently at odds in terms of direction and policy.

A Renegade Mind sees beyond the obvious and focuses on outcomes and consequences and not image, words and waffle. The Cult embarked on a campaign to divide America between those who blindly support its agenda (the mentality known as 'Woke') and those who are pushing back on where the Cult and its Sabbatians want to go. This presents infinite possibilities for dividing and ruling the population by setting them at war with each other and allows a perceptual ring fence of demonisation to encircle the Pushbackers in a modern version of the Little Big Horn in 1876 when American cavalry led by Lieutenant Colonel George Custer were drawn into a trap, surrounded and killed by Native American tribes defending their land of thousands of years from being seized by the government. In this modern version the roles are reversed and it's those defending themselves from the Sabbatian government who are surrounded and the government that's seeking to destroy them. This trap was set years ago and to explain how we must return to 2016

and the emergence of Donald Trump as a candidate to be President of the United States. He set out to overcome the best part of 20 other candidates in the Republican Party before and during the primaries and was not considered by many in those early stages to have a prayer of living in the White House. The Republican Party was said to have great reservations about Trump and yet somehow he won the nomination. When you know how American politics works – politics in general – there is no way that Trump could have become the party's candidate unless the Sabbatian-controlled 'Neocons' that run the Republican Party wanted that to happen. We saw the proof in emails and documents made public by WikiLeaks that the Democratic Party hierarchy, or Democons, systematically undermined the campaign of Bernie Sanders to make sure that Sabbatian gofer Hillary Clinton won the nomination to be their presidential candidate. If the Democons could do that then the Neocons in the Republican Party could have derailed Trump in the same way. But they didn't and at that stage I began to conclude that Trump could well be the one chosen to be president. If that was the case the 'why' was pretty clear to see – the goal of dividing America between Cult agenda-supporting Wokers and Pushbackers who gravitated to Trump because he was telling them what they wanted to hear. His constituency of support had been increasingly ignored and voiceless for decades and profoundly through the eight years of Sabbatian puppet Barack Obama. Now here was someone speaking their language of pulling back from the incessant globalisation of political and economic power, the exporting of American jobs to China and elsewhere by 'American' (Sabbatian) corporations, the deletion of free speech, and the mass immigration policies that had further devastated job opportunities for the urban working class of all races and the once American heartlands of the Midwest.

Beware the forked tongue

Those people collectively sighed with relief that at last a political leader was apparently on their side, but another trait of the Renegade Mind is that you look even harder at people telling you

what you want to hear than those who are telling you otherwise. Obviously as I said earlier people wish what they want to hear to be true and genuine and they are much more likely to believe that than someone saying what they don't want to here and don't want to be true. Sales people are taught to be skilled in eliciting by calculated questioning what their customers want to hear and repeating that back to them as their own opinion to get their targets to like and trust them. Assets of the Cult are also sales people in the sense of selling perception. To read Cult manipulation you have to play the long and expanded game and not fall for the Vaudeville show of party politics. Both American parties are vehicles for the Cult and they exploit them in different ways depending on what the agenda requires at that moment. Trump and the Republicans were used to be the focus of dividing America and isolating Pushbackers to open the way for a Biden presidency to become the most extreme in American history by advancing the full-blown Woke (Cult) agenda with the aim of destroying and silencing Pushbackers now labelled Nazi Trump supporters and white supremacists.

Sabbatians wanted Trump in office for the reasons described by ultra-Zionist Saul Alinsky (1909-1972) who was promoting the Woke philosophy through 'community organising' long before anyone had heard of it. In those days it still went by its traditional name of Marxism. The reason for the manipulated Trump phenomenon was laid out in Alinsky's 1971 book, *Rules for Radicals*, which was his blueprint for overthrowing democratic and other regimes and replacing them with Sabbatian Marxism. Not surprisingly his to-do list was evident in the Sabbatian French and Russian 'Revolutions' and that in China which will become very relevant in the next chapter about the 'Covid' hoax. Among Alinsky's followers have been the deeply corrupt Barack Obama, House Speaker Nancy Pelosi and Hillary Clinton who described him as a 'hero'. All three are Sabbatian stooges with Pelosi personifying the arrogant corrupt idiocy that so widely fronts up for the Cult inner core. Predictably as a Sabbatian advocate of the 'light-bringer' Alinsky features Lucifer on the dedication page of his book as the original radical who gained

his own kingdom ('Earth' as we shall see). One of Alinsky's golden radical rules was to pick an individual and focus all attention, hatred and blame on them and not to target faceless bureaucracies and corporations. *Rules for Radicals* is really a Sabbatian handbook with its contents repeatedly employed all over the world for centuries and why wouldn't Sabbatians bring to power their designer-villain to be used as the individual on which all attention, hatred and blame was bestowed? This is what they did and the only question for me is how much Trump knew that and how much he was manipulated. A bit of both, I suspect. This was Alinsky's Trump technique from a man who died in 1972. The technique has spanned history:

Pick the target, freeze it, personalize it, polarize it. Don't try to attack abstract corporations or bureaucracies. Identify a responsible individual. Ignore attempts to shift or spread the blame.

From the moment Trump came to illusory power everything was about him. It wasn't about Republican policy or opinion, but all about Trump. Everything he did was presented in negative, derogatory and abusive terms by the Sabbatian-dominated media led by Cult operations such as CNN, MSNBC, *The New York Times* and the Jeff Bezos-owned *Washington Post* – 'Pick the target, freeze it, personalize it, polarize it.' Trump was turned into a demon to be vilified by those who hated him and a demi-god loved by those who worshipped him. This, in turn, had his supporters, too, presented as equally demonic in preparation for the punchline later down the line when Biden was about to take office. It was here's a Trump, there's a Trump, everywhere a Trump, Trump. Virtually every news story or happening was filtered through the lens of 'The Donald'. You loved him or hated him and which one you chose was said to define you as Satan's spawn or a paragon of virtue. Even supporting some Trump policies or statements and not others was enough for an assault on your character. No shades of grey were or are allowed. Everything is black and white (literally and figuratively). A Californian I knew had her head utterly scrambled by her hatred for Trump while telling people they should love each other. She was so totally consumed by

Trump Derangement Syndrome as it became to be known that this glaring contradiction would never have occurred to her. By definition anyone who criticised Trump or praised his opponents was a hero and this lady described Joe Biden as 'a kind, honest gentleman' when he's a provable liar, mega-crook and vicious piece of work to boot. Sabbatians had indeed divided America using Trump as the fall-guy and all along the clock was ticking on the consequences for his supporters.

In hock to his masters

Trump gave Sabbatians via Israel almost everything they wanted in his four years. Ask and you shall receive was the dynamic between himself and Benjamin Netanyahu orchestrated by Trump's ultra-Zionist son-in-law Jared Kushner, his ultra-Zionist Ambassador to Israel, David Friedman, and ultra-Zionist 'Israel adviser', Jason Greenblatt. The last two were central to the running and protecting from collapse of his business empire, the Trump Organisation, and colossal business failures made him forever beholding to Sabbatian networks that bailed him out. By the start of the 1990s Trump owed $4 billion to banks that he couldn't pay and almost $1billion of that was down to him personally and not his companies. This mega-disaster was the result of building two new casinos in Atlantic City and buying the enormous Taj Mahal operation which led to crippling debt payments. He had borrowed fantastic sums from 72 banks with major Sabbatian connections and although the scale of debt should have had him living in a tent alongside the highway they never foreclosed. A plan was devised to lift Trump from the mire by BT Securities Corporation and Rothschild Inc. and the case was handled by Wilber Ross who had worked for the Rothschilds for 27 years. Ross would be named US Commerce Secretary after Trump's election. Another crucial figure in saving Trump was ultra-Zionist 'investor' Carl Icahn who bought the Taj Mahal casino. Icahn was made special economic adviser on financial regulation in the Trump administration. He didn't stay long but still managed to find time to make a tidy sum of a reported $31.3 million when he sold his

holdings affected by the price of steel three days before Trump imposed a 235 percent tariff on steel imports. What amazing bits of luck these people have. Trump and Sabbatian operatives have long had a close association and his mentor and legal adviser from the early 1970s until 1986 was the dark and genetically corrupt ultra-Zionist Roy Cohn who was chief counsel to Senator Joseph McCarthy's 'communist' witch-hunt in the 1950s. *Esquire* magazine published an article about Cohn with the headline 'Don't mess with Roy Cohn'. He was described as the most feared lawyer in New York and 'a ruthless master of dirty tricks ... [with] ... more than one Mafia Don on speed dial'. Cohn's influence, contacts, support and protection made Trump a front man for Sabbatians in New York with their connections to one of Cohn's many criminal employers, the 'Russian' Sabbatian Mafia. Israel-centric media mogul Rupert Murdoch was introduced to Trump by Cohn and they started a long friendship. Cohn died in 1986 weeks after being disbarred for unethical conduct by the Appellate Division of the New York State Supreme Court. The wheels of justice do indeed run slow given the length of Cohn's crooked career.

QAnon-sense

We are asked to believe that Donald Trump with his fundamental connections to Sabbatian networks and operatives has been leading the fight to stop the Sabbatian agenda for the fascistic control of America and the world. Sure he has. A man entrapped during his years in the White House by Sabbatian operatives and whose biggest financial donor was casino billionaire Sheldon Adelson who was Sabbatian to his DNA?? Oh, do come on. Trump has been used to divide America and isolate Pushbackers on the Cult agenda under the heading of 'Trump supporters', 'insurrectionists' and 'white supremacists'. The US Intelligence/Mossad Psyop or psychological operation known as QAnon emerged during the Trump years as a central pillar in the Sabbatian campaign to lead Pushbackers into the trap set by those that wished to destroy them. I knew from the start that QAnon was a scam because I had seen the same scenario many

times before over 30 years under different names and I had written about one in particular in the books. 'Not again' was my reaction when QAnon came to the fore. The same script is pulled out every few years and a new name added to the letterhead. The story always takes the same form: 'Insiders' or 'the good guys' in the government-intelligence-military 'Deep State' apparatus were going to instigate mass arrests of the 'bad guys' which would include the Rockefellers, Rothschilds, Barack Obama, Hillary Clinton, George Soros, etc., etc. Dates are given for when the 'good guys' are going to move in, but the dates pass without incident and new dates are given which pass without incident. The central message to Pushbackers in each case is that they don't have to do anything because there is 'a plan' and it is all going to be sorted by the 'good guys' on the inside. 'Trust the plan' was a QAnon mantra when the only plan was to misdirect Pushbackers into putting their trust in a Psyop they believed to be real. Beware, beware, those who tell you what you want to hear and always check it out. Right up to Biden's inauguration QAnon was still claiming that 'the Storm' was coming and Trump would stay on as president when Biden and his cronies were arrested and jailed. It was never going to happen and of course it didn't, but what did happen as a result provided that punchline to the Sabbatian Trump/QAnon Psyop.

On January 6th, 2021, a very big crowd of Trump supporters gathered in the National Mall in Washington DC down from the Capitol Building to protest at what they believed to be widespread corruption and vote fraud that stopped Trump being re-elected for a second term as president in November, 2020. I say as someone that does not support Trump or Biden that the evidence is clear that major vote-fixing went on to favour Biden, a man with cognitive problems so advanced he can often hardly string a sentence together without reading the words written for him on the Teleprompter. Glaring ballot discrepancies included serious questions about electronic voting machines that make vote rigging a comparative cinch and hundreds of thousands of paper votes that suddenly appeared during already advanced vote counts and virtually all of

them for Biden. Early Trump leads in crucial swing states suddenly began to close and disappear. The pandemic hoax was used as the excuse to issue almost limitless numbers of mail-in ballots with no checks to establish that the recipients were still alive or lived at that address. They were sent to streams of people who had not even asked for them. Private organisations were employed to gather these ballots and who knows what they did with them before they turned up at the counts. The American election system has been manipulated over decades to become a sick joke with more holes than a Swiss cheese for the express purpose of dictating the results. Then there was the criminal manipulation of information by Sabbatian tech giants like Facebook, Twitter and Google-owned YouTube which deleted pro-Trump, anti-Biden accounts and posts while everything in support of Biden was left alone. Sabbatians wanted Biden to win because after the dividing of America it was time for full-on Woke and every aspect of the Cult agenda to be unleashed.

Hunter gatherer

Extreme Silicon Valley bias included blocking information by the *New York Post* exposing a Biden scandal that should have ended his bid for president in the final weeks of the campaign. Hunter Biden, his monumentally corrupt son, is reported to have sent a laptop to be repaired at a local store and failed to return for it. Time passed until the laptop became the property of the store for non-payment of the bill. When the owner saw what was on the hard drive he gave a copy to the FBI who did nothing even though it confirmed widespread corruption in which the Joe Biden family were using his political position, especially when he was vice president to Obama, to make multiple millions in countries around the world and most notably Ukraine and China. Hunter Biden's one-time business partner Tony Bobulinski went public when the story broke in the *New York Post* to confirm the corruption he saw and that Joe Biden not only knew what was going on he also profited from the spoils. Millions were handed over by a Chinese company with close

connections – like all major businesses in China – to the Chinese communist party of President Xi Jinping. Joe Biden even boasted at a meeting of the Cult's World Economic Forum that as vice president he had ordered the government of Ukraine to fire a prosecutor. What he didn't mention was that the same man just happened to be investigating an energy company which was part of Hunter Biden's corrupt portfolio. The company was paying him big bucks for no other reason than the influence his father had. Overnight Biden's presidential campaign should have been over given that he had lied publicly about not knowing what his son was doing. Instead almost the entire Sabbatian-owned mainstream media and Sabbatian-owned Silicon Valley suppressed circulation of the story. This alone went a mighty way to rigging the election of 2020. Cult assets like Mark Zuckerberg at Facebook also spent hundreds of millions to be used in support of Biden and vote 'administration'.

The Cult had used Trump as the focus to divide America and was now desperate to bring in moronic, pliable, corrupt Biden to complete the double-whammy. No way were they going to let little things like the will of the people thwart their plan. Silicon Valley widely censored claims that the election was rigged because it *was* rigged. For the same reason anyone claiming it was rigged was denounced as a 'white supremacist' including the pathetically few Republican politicians willing to say so. Right across the media where the claim was mentioned it was described as a 'false claim' even though these excuses for 'journalists' would have done no research into the subject whatsoever. Trump won seven million more votes than any sitting president had ever achieved while somehow a cognitively-challenged soon to be 78-year-old who was hidden away from the public for most of the campaign managed to win more votes than any presidential candidate in history. It makes no sense. You only had to see election rallies for both candidates to witness the enthusiasm for Trump and the apathy for Biden. Tens of thousands would attend Trump events while Biden was speaking in empty car parks with often only television crews attending and framing their shots to hide the fact that no one was there. It was pathetic to see

footage come to light of Biden standing at a podium making speeches only to TV crews and party fixers while reading the words written for him on massive Teleprompter screens. So, yes, those protestors on January 6th had a point about election rigging, but some were about to walk into a trap laid for them in Washington by the Cult Deep State and its QAnon Psyop. This was the Capitol Hill riot ludicrously dubbed an 'insurrection'.

The spider and the fly

Renegade Minds know there are not two 'sides' in politics, only one side, the Cult, working through all 'sides'. It's a stage show, a puppet show, to direct the perceptions of the population into focusing on diversions like parties and candidates while missing the puppeteers with their hands holding all the strings. The Capitol Hill 'insurrection' brings us back to the Little Big Horn. Having created two distinct opposing groupings – Woke and Pushbackers – the trap was about to be sprung. Pushbackers were to be encircled and isolated by associating them all in the public mind with Trump and then labelling Trump as some sort of Confederate leader. I knew immediately that the Capitol riot was a set-up because of two things. One was how easy the rioters got into the building with virtually no credible resistance and secondly I could see – as with the 'Covid' hoax in the West at the start of 2020 – how the Cult could exploit the situation to move its agenda forward with great speed. My experience of Cult techniques and activities over more than 30 years has showed me that while they do exploit situations they haven't themselves created this never happens with events of fundamental agenda significance. Every time major events giving cultists the excuse to rapidly advance their plan you find they are manipulated into being for the specific reason of providing that excuse – Problem-Reaction-Solution. Only a tiny minority of the huge crowd of Washington protestors sought to gain entry to the Capitol by smashing windows and breaching doors. That didn't matter. The whole crowd and all Pushbackers, even if they did not support Trump, were going to be lumped together as dangerous

insurrectionists and conspiracy theorists. The latter term came into widespread use through a CIA memo in the 1960s aimed at discrediting those questioning the nonsensical official story of the Kennedy assassination and it subsequently became widely employed by the media. It's still being used by inept 'journalists' with no idea of its origin to discredit anyone questioning anything that authority claims to be true. When you are perpetrating a conspiracy you need to discredit the very word itself even though the dictionary definition of conspiracy is merely 'the activity of secretly planning with other people to do something bad or illegal' and 'a general agreement to keep silent about a subject for the purpose of keeping it secret'. On that basis there are conspiracies almost wherever you look. For obvious reasons the Cult and its lapdog media have to claim there are no conspiracies even though the word appears in state laws as with conspiracy to defraud, to murder, and to corrupt public morals.

Agent provocateurs are widely used by the Cult Deep State to manipulate genuine people into acting in ways that suit the desired outcome. By genuine in this case I mean protestors genuinely supporting Trump and claims that the election was stolen. In among them, however, were agents of the state wearing the garb of Trump supporters and QAnon to pump-prime the Capital riot which some genuine Trump supporters naively fell for. I described the situation as 'Come into my parlour said the spider to the fly'. Leaflets appeared through the Woke paramilitary arm Antifa, the anti-fascist fascists, calling on supporters to turn up in Washington looking like Trump supporters even though they hated him. Some of those arrested for breaching the Capitol Building were sourced to Antifa and its stable mate Black Lives Matter. Both organisations are funded by Cult billionaires and corporations. One man charged for the riot was according to his lawyer a former FBI agent who had held top secret security clearance for 40 years. Attorney Thomas Plofchan said of his client, 66-year-old Thomas Edward Caldwell:

He has held a Top Secret Security Clearance since 1979 and has undergone multiple Special Background Investigations in support of his clearances. After retiring from the Navy, he

worked as a section chief for the Federal Bureau of Investigation from 2009-2010 as a GS-12 [mid-level employee].

He also formed and operated a consulting firm performing work, often classified, for U.S government customers including the US. Drug Enforcement Agency, Department of Housing and Urban Development, the US Coast Guard, and the US Army Personnel Command.

A judge later released Caldwell pending trial in the absence of evidence about a conspiracy or that he tried to force his way into the building. *The New York Post* reported a 'law enforcement source' as saying that 'at least two known Antifa members were spotted' on camera among Trump supporters during the riot while one of the rioters arrested was John Earle Sullivan, a seriously extreme Black Lives Matter Trump-hater from Utah who was previously arrested and charged in July, 2020, over a BLM-Antifa riot in which drivers were threatened and one was shot. Sullivan is the founder of Utah-based Insurgence USA which is an affiliate of the Cult-created-and-funded Black Lives Matter movement. Footage appeared and was then deleted by Twitter of Trump supporters calling out Antifa infiltrators and a group was filmed changing into pro-Trump clothing before the riot. Security at the building was *pathetic* – as planned. Colonel Leroy Fletcher Prouty, a man with long experience in covert operations working with the US security apparatus, once described the tell-tale sign to identify who is involved in an assassination. He said:

No one has to direct an assassination – it happens. The active role is played secretly by permitting it to happen. This is the greatest single clue. Who has the power to call off or reduce the usual security precautions?

This principle applies to many other situations and certainly to the Capitol riot of January 6th, 2021.

The sting

With such a big and potentially angry crowd known to be gathering near the Capitol the security apparatus would have had a major police detail to defend the building with National Guard troops on

standby given the strength of feeling among people arriving from all over America encouraged by the QAnon Psyop and statements by Donald Trump. Instead Capitol Police 'security' was flimsy, weak, and easily breached. The same number of officers was deployed as on a regular day and that is a blatant red flag. They were not staffed or equipped for a possible riot that had been an obvious possibility in the circumstances. No protective and effective fencing worth the name was put in place and there were no contingency plans. The whole thing was basically a case of standing aside and waving people in. Once inside police mostly backed off apart from one Capitol police officer who ridiculously shot dead unarmed Air Force veteran protestor Ashli Babbitt without a warning as she climbed through a broken window. The 'investigation' refused to name or charge the officer after what must surely be considered a murder in the circumstances. They just lifted a carpet and swept. The story was endlessly repeated about five people dying in the 'armed insurrection' when there was no report of rioters using weapons. Apart from Babbitt the other four died from a heart attack, strokes and apparently a drug overdose. Capitol police officer Brian Sicknick was reported to have died after being bludgeoned with a fire extinguisher when he was alive after the riot was over and died later of what the Washington Medical Examiner's Office said was a stroke. Sicknick had no external injuries. The lies were delivered like rapid fire. There was a narrative to build with incessant repetition of the lie until the lie became the accepted 'everybody knows that' truth. The 'Big Lie' technique of Nazi Propaganda Minister Joseph Goebbels is constantly used by the Cult which was behind the Nazis and is today behind the 'Covid' and 'climate change' hoaxes. Goebbels said:

If you tell a lie big enough and keep repeating it, people will eventually come to believe it. The lie can be maintained only for such time as the State can shield the people from the political, economic and/or military consequences of the lie. It thus becomes vitally important for the State to use all of its powers to repress dissent, for the truth is the mortal enemy of the lie, and thus by extension, the truth is the greatest enemy of the State.

Most protestors had a free run of the Capitol Building. This allowed pictures to be taken of rioters in iconic parts of the building including the Senate chamber which could be used as propaganda images against all Pushbackers. One Congresswoman described the scene as 'the worst kind of non-security anybody could ever imagine'. Well, the first part was true, but someone obviously did imagine it and made sure it happened. Some photographs most widely circulated featured people wearing QAnon symbols and now the Psyop would be used to dub all QAnon followers with the ubiquitous fit-all label of 'white supremacist' and 'insurrectionists'. When a Muslim extremist called Noah Green drove his car at two police officers at the Capitol Building killing one in April, 2021, there was no such political and media hysteria. They were just disappointed he wasn't white.

The witch-hunt

Government prosecutor Michael Sherwin, an aggressive, dark-eyed, professional Rottweiler led the 'investigation' and to call it over the top would be to understate reality a thousand fold. Hundreds were tracked down and arrested for the crime of having the wrong political views and people were jailed who had done nothing more than walk in the building, committed no violence or damage to property, took a few pictures and left. They were labelled a 'threat to the Republic' while Biden sat in the White House signing executive orders written for him that were dismantling 'the Republic'. Even when judges ruled that a mother and son should not be in jail the government kept them there. Some of those arrested have been badly beaten by prison guards in Washington and lawyers for one man said he suffered a fractured skull and was made blind in one eye. Meanwhile a woman is shot dead for no reason by a Capitol Police officer and we are not allowed to know who he is never mind what has happened to him although that will be *nothing*. The Cult's QAnon/Trump sting to identify and isolate Pushbackers and then target them on the road to crushing and deleting them was a resounding success. You would have thought the Russians had

invaded the building at gunpoint and lined up senators for a firing squad to see the political and media reaction. Congresswoman Alexandria Ocasio-Cortez is a child in a woman's body, a terrible-twos, me, me, me, Woker narcissist of such proportions that words have no meaning. She said she thought she was going to die when 'insurrectionists' banged on her office door. It turned out she wasn't even in the Capitol Building when the riot was happening and the 'banging' was a Capitol Police officer. She referred to herself as a 'survivor' which is an insult to all those true survivors of violent and sexual abuse while she lives her pampered and privileged life talking drivel for a living. Her Woke colleague and fellow mega-narcissist Rashida Tlaib broke down describing the devastating effect on her, too, of *not being* in the building when the rioters were there. Ocasio-Cortez and Tlaib are members of a fully-Woke group of Congresswomen known as 'The Squad' along with Ilhan Omar and Ayanna Pressley. The Squad from what I can see can be identified by its vehement anti-white racism, anti-white men agenda, and, as always in these cases, the absence of brain cells on active duty.

The usual suspects were on the riot case immediately in the form of Democrat ultra-Zionist senators and operatives Chuck Schumer and Adam Schiff demanding that Trump be impeached for 'his part in the insurrection'. The same pair of prats had led the failed impeachment of Trump over the invented 'Russia collusion' nonsense which claimed Russia had helped Trump win the 2016 election. I didn't realise that Tel Aviv had been relocated just outside Moscow. I must find an up-to-date map. The Russia hoax was a Sabbatian operation to keep Trump occupied and impotent and to stop any rapport with Russia which the Cult wants to retain as a perceptual enemy to be pulled out at will. Puppet Biden began attacking Russia when he came to office as the Cult seeks more upheaval, division and war across the world. A two-year stage show 'Russia collusion inquiry' headed by the not-very-bright former 9/11 FBI chief Robert Mueller, with support from 19 lawyers, 40 FBI agents plus intelligence analysts, forensic accountants and other

staff, devoured tens of millions of dollars and found no evidence of Russia collusion which a ten-year-old could have told them on day one. Now the same moronic Schumer and Schiff wanted a second impeachment of Trump over the Capitol 'insurrection' (riot) which the arrested development of Schumer called another 'Pearl Harbor' while others compared it with 9/11 in which 3,000 died and, in the case of CNN, with the Rwandan genocide in the 1990s in which an estimated 500,000 to 600,000 were murdered, between 250, 000 and 500,000 women were raped, and populations of whole towns were hacked to death with machetes. To make those comparisons purely for Cult political reasons is beyond insulting to those that suffered and lost their lives and confirms yet again the callous inhumanity that we are dealing with. Schumer is a monumental idiot and so is Schiff, but they serve the Cult agenda and do whatever they're told so they get looked after. Talking of idiots – another inane man who spanned the Russia and Capitol impeachment attempts was Senator Eric Swalwell who had the nerve to accuse Trump of collusion with the Russians while sleeping with a Chinese spy called Christine Fang or 'Fang Fang' which is straight out of a Bond film no doubt starring Klaus Schwab as the bloke living on a secret island and controlling laser weapons positioned in space and pointing at world capitals. Fang Fang plays the part of Bond's infiltrator girlfriend which I'm sure she would enjoy rather more than sharing a bed with the brainless Swalwell, lying back and thinking of China. The FBI eventually warned Swalwell about Fang Fang which gave her time to escape back to the Chinese dictatorship. How very thoughtful of them. The second Trump impeachment also failed and hardly surprising when an impeachment is supposed to remove a sitting president and by the time it happened Trump was no longer president. These people are running your country America, well, officially anyway. Terrifying isn't it?

Outcomes tell the story - always

The outcome of all this – and it's the *outcome* on which Renegade Minds focus, not the words – was that a vicious, hysterical and

obviously pre-planned assault was launched on Pushbackers to censor, silence and discredit them and even targeted their right to earn a living. They have since been condemned as 'domestic terrorists' that need to be treated like Al-Qaeda and Islamic State. 'Domestic terrorists' is a label the Cult has been trying to make stick since the period of the Oklahoma bombing in 1995 which was blamed on 'far-right domestic terrorists'. If you read *The Trigger* you will see that the bombing was clearly a Problem-Reaction-Solution carried out by the Deep State during a Bill Clinton administration so corrupt that no dictionary definition of the term would even nearly suffice. Nearly 30, 000 troops were deployed from all over America to the empty streets of Washington for Biden's inauguration. Ten thousand of them stayed on with the pretext of protecting the capital from insurrectionists when it was more psychological programming to normalise the use of the military in domestic law enforcement in support of the Cult plan for a police-military state. Biden's fascist administration began a purge of 'wrong-thinkers' in the military which means anyone that is not on board with Woke. The Capitol Building was surrounded by a fence with razor wire and the Land of the Free was further symbolically and literally dismantled. The circle was completed with the installation of Biden and the exploitation of the QAnon Psyop.

America had never been so divided since the civil war of the 19th century, Pushbackers were isolated and dubbed terrorists and now, as was always going to happen, the Cult immediately set about deleting what little was left of freedom and transforming American society through a swish of the hand of the most controlled 'president' in American history leading (officially at least) the most extreme regime since the country was declared an independent state on July 4th, 1776. Biden issued undebated, dictatorial executive orders almost by the hour in his opening days in office across the whole spectrum of the Cult wish-list including diluting controls on the border with Mexico allowing thousands of migrants to illegally enter the United States to transform the demographics of America and import an election-changing number of perceived Democrat

voters. Then there were Biden deportation amnesties for the already illegally resident (estimated to be as high as 20 or even 30 million). A bill before Congress awarded American citizenship to anyone who could prove they had worked in agriculture for just 180 days in the previous two years as 'Big Ag' secured its slave labour long-term. There were the plans to add new states to the union such as Puerto Rico and making Washington DC a state. They are all parts of a plan to ensure that the Cult-owned Woke Democrats would be permanently in power.

Border – what border?

I have exposed in detail in other books how mass immigration into the United States and Europe is the work of Cult networks fuelled by the tens of billions spent to this and other ends by George Soros and his global Open Society (open borders) Foundations. The impact can be seen in America alone where the population has increased by *100 million* in little more than 30 years mostly through immigration. I wrote in *The Answer* that the plan was to have so many people crossing the southern border that the numbers become unstoppable and we are now there under Cult-owned Biden. El Salvador in Central America puts the scale of what is happening into context. A third of the population now lives in the United States, much of it illegally, and many more are on the way. The methodology is to crush Central and South American countries economically and spread violence through machete-wielding psychopathic gangs like MS-13 based in El Salvador and now operating in many American cities. Biden-imposed lax security at the southern border means that it is all but open. He said before his 'election' that he wanted to see a surge towards the border if he became president and that was the green light for people to do just that after election day to create the human disaster that followed for both America and the migrants. When that surge came the imbecilic Alexandria Ocasio-Cortez said it wasn't a 'surge' because they are 'children, not insurgents' and the term 'surge' (used by Biden) was a claim of 'white supremacists'.

This disingenuous lady may one day enter the realm of the most basic intelligence, but it won't be any time soon.

Sabbatians and the Cult are in the process of destroying America by importing violent people and gangs in among the genuine to terrorise American cities and by overwhelming services that cannot cope with the sheer volume of new arrivals. Something similar is happening in Europe as Western society in general is targeted for demographic and cultural transformation and upheaval. The plan demands violence and crime to create an environment of intimidation, fear and division and Soros has been funding the election of district attorneys across America who then stop prosecuting many crimes, reduce sentences for violent crimes and free as many violent criminals as they can. Sabbatians are creating the chaos from which order – their order – can respond in a classic Problem-Reaction-Solution. A Freemasonic moto says 'Ordo Ab Chao' (Order out of Chaos) and this is why the Cult is constantly creating chaos to impose a new 'order'. Here you have the reason the Cult is constantly creating chaos. The 'Covid' hoax can be seen with those entering the United States by plane being forced to take a 'Covid' test while migrants flooding through southern border processing facilities do not. Nothing is put in the way of mass migration and if that means ignoring the government's own 'Covid' rules then so be it. They know it's all bullshit anyway. Any pushback on this is denounced as 'racist' by Wokers and Sabbatian fronts like the ultra-Zionist Anti-Defamation League headed by the appalling Jonathan Greenblatt which at the same time argues that Israel should not give citizenship and voting rights to more Palestinian Arabs or the 'Jewish population' (in truth the Sabbatian network) will lose control of the country.

Society-changing numbers

Biden's masters have declared that countries like El Salvador are so dangerous that their people must be allowed into the United States for humanitarian reasons when there are fewer murders in large parts of many Central American countries than in US cities like

Baltimore. That is not to say Central America cannot be a dangerous place and Cult-controlled American governments have been making it so since way back, along with the dismantling of economies, in a long-term plan to drive people north into the United States. Parts of Central America are very dangerous, but in other areas the story is being greatly exaggerated to justify relaxing immigration criteria. Migrants are being offered free healthcare and education in the United States as another incentive to head for the border and there is no requirement to be financially independent before you can enter to prevent the resources of America being drained. You can't blame migrants for seeking what they believe will be a better life, but they are being played by the Cult for dark and nefarious ends. The numbers since Biden took office are huge. In February, 2021, more than 100,000 people were known to have tried to enter the US illegally through the southern border (it was 34,000 in the same month in 2020) and in March it was 170,000 – a 418 percent increase on March, 2020. These numbers are only known people, not the ones who get in unseen. The true figure for migrants illegally crossing the border in a single month was estimated by one congressman at 250,000 and that number will only rise under Biden's current policy. Gangs of murdering drug-running thugs that control the Mexican side of the border demand money – thousands of dollars – to let migrants cross the Rio Grande into America. At the same time gun battles are breaking out on the border several times a week between rival Mexican drug gangs (which now operate globally) who are equipped with sophisticated military-grade weapons, grenades and armoured vehicles. While the Capitol Building was being 'protected' from a non-existent 'threat' by thousands of troops, and others were still deployed at the time in the Cult Neocon war in Afghanistan, the southern border of America was left to its fate. This is not incompetence, it is cold calculation.

By March, 2021, there were 17,000 unaccompanied children held at border facilities and many of them are ensnared by people traffickers for paedophile rings and raped on their journey north to America. This is not conjecture – this is fact. Many of those designated

children are in reality teenage boys or older. Meanwhile Wokers posture their self-purity for encouraging poor and tragic people to come to America and face this nightmare both on the journey and at the border with the disgusting figure of House Speaker Nancy Pelosi giving disingenuous speeches about caring for migrants. The woman's evil. Wokers condemned Trump for having children in cages at the border (so did Obama, *Shhhh*), but now they are sleeping on the floor without access to a shower with one border facility 729 percent over capacity. The Biden insanity even proposed flying migrants from the southern border to the northern border with Canada for 'processing'. The whole shambles is being overseen by ultra-Zionist Secretary of Homeland Security, the moronic liar Alejandro Mayorkas, who banned news cameras at border facilities to stop Americans seeing what was happening. Mayorkas said there was not a ban on news crews; it was just that they were not allowed to film. Alongside him at Homeland Security is another ultra-Zionist Cass Sunstein appointed by Biden to oversee new immigration laws. Sunstein despises conspiracy researchers to the point where he suggests they should be banned or *taxed* for having such views. The man is not bonkers or anything. He's perfectly well-adjusted, but adjusted to what is the question. Criticise what is happening and you are a 'white supremacist' when earlier non-white immigrants also oppose the numbers which effect their lives and opportunities. Black people in poor areas are particularly damaged by uncontrolled immigration and the increased competition for work opportunities with those who will work for less. They are also losing voting power as Hispanics become more dominant in former black areas. It's a downward spiral for them while the billionaires behind the policy drone on about how much they care about black people and 'racism'. None of this is about compassion for migrants or black people – that's just wind and air. Migrants are instead being mercilessly exploited to transform America while the countries they leave are losing their future and the same is true in Europe. Mass immigration may now be the work of Woke Democrats, but it can be traced back to the 1986 Immigration Reform and Control Act (it

wasn't) signed into law by Republican hero President Ronald Reagan which gave amnesty to millions living in the United States illegally and other incentives for people to head for the southern border. Here we have the one-party state at work again.

Save me syndrome

Almost every aspect of what I have been exposing as the Cult agenda was on display in even the first days of 'Biden' with silencing of Pushbackers at the forefront of everything. A Renegade Mind will view the Trump years and QAnon in a very different light to their supporters and advocates as the dots are connected. The QAnon/Trump Psyop has given the Cult all it was looking for. We may not know how much, or little, that Trump realised he was being used, but that's a side issue. This pincer movement produced the desired outcome of dividing America and having Pushbackers isolated. To turn this around we have to look at new routes to empowerment which do not include handing our power to other people and groups through what I will call the 'Save Me Syndrome' – 'I want someone else to do it so that I don't have to'. We have seen this at work throughout human history and the QAnon/Trump Psyop is only the latest incarnation alongside all the others. Religion is an obvious expression of this when people look to a 'god' or priest to save them or tell them how to be saved and then there are 'save me' politicians like Trump. Politics is a diversion and not a 'saviour'. It is a means to block positive change, not make it possible.

Save Me Syndrome always comes with the same repeating theme of handing your power to whom or what you believe will save you while your real 'saviour' stares back from the mirror every morning. Renegade Minds are constantly vigilant in this regard and always asking the question 'What can I do?' rather than 'What can someone else do for me?' Gandhi was right when he said: 'You must be the change you want to see in the world.' We are indeed the people we have been waiting for. We are presented with a constant raft of reasons to concede that power to others and forget where the real power is. Humanity has the numbers and the Cult does not. It has to

use diversion and division to target the unstoppable power that comes from unity. Religions, governments, politicians, corporations, media, QAnon, are all different manifestations of this power-diversion and dilution. Refusing to give your power to governments and instead handing it to Trump and QAnon is not to take a new direction, but merely to recycle the old one with new names on the posters. I will explore this phenomenon as we proceed and how to break the cycles and recycles that got us here through the mists of repeating perception and so repeating history.

For now we shall turn to the most potent example in the entire human story of the consequences that follow when you give your power away. I am talking, of course, of the 'Covid' hoax.

CHAPTER FOUR

'Covid': Calculated catastrophe

Facts are threatening to those invested in fraud
DaShanne Stokes

We can easily unravel the real reason for the 'Covid pandemic' hoax by employing the Renegade Mind methodology that I have outlined this far. We'll start by comparing the long-planned Cult outcome with the 'Covid pandemic' outcome. Know the outcome and you'll see the journey.

I have highlighted the plan for the Hunger Games Society which has been in my books for so many years with the very few controlling the very many through ongoing dependency. To create this dependency it is essential to destroy independent livelihoods, businesses and employment to make the population reliant on the state (the Cult) for even the basics of life through a guaranteed pittance income. While independence of income remained these Cult ambitions would be thwarted. With this knowledge it was easy to see where the 'pandemic' hoax was going once talk of 'lockdowns' began and the closing of all but perceived 'essential' businesses to 'save' us from an alleged 'deadly virus'. Cult corporations like Amazon and Walmart were naturally considered 'essential' while mom and pop shops and stores had their doors closed by fascist decree. As a result with every new lockdown and new regulation more small and medium, even large businesses not owned by the Cult, went to the wall while Cult giants and their frontmen and women grew financially fatter by the second. Mom and pop were

denied an income and the right to earn a living and the wealth of people like Jeff Bezos (Amazon), Mark Zuckerberg (Facebook) and Sergei Brin and Larry Page (Google/Alphabet) have reached record levels. The Cult was increasing its own power through further dramatic concentrations of wealth while the competition was being destroyed and brought into a state of dependency. Lockdowns have been instigated to secure that very end and were never anything to do with health. My brother Paul spent 45 years building up a bus repair business, but lockdowns meant buses were running at a fraction of normal levels for months on end. Similar stories can told in their hundreds of millions worldwide. Efforts of a lifetime coldly destroyed by Cult multi-billionaires and their lackeys in government and law enforcement who continued to earn their living from the taxation of the people while denying the right of the same people to earn theirs. How different it would have been if those making and enforcing these decisions had to face the same financial hardships of those they affected, but they never do.

Gates of Hell

Behind it all in the full knowledge of what he is doing and why is the psychopathic figure of Cult operative Bill Gates. His puppet Tedros at the World Health Organization declared 'Covid' a pandemic in March, 2020. The WHO had changed the definition of a 'pandemic' in 2009 just a month before declaring the 'swine flu pandemic' which would not have been so under the previous definition. The same applies to 'Covid'. The definition had included… 'an infection by an infectious agent, occurring simultaneously in different countries, with a significant mortality rate relative to the proportion of the population infected'. The new definition removed the need for 'significant mortality'. The 'pandemic' has been fraudulent even down to the definition, but Gates demanded economy-destroying lockdowns, school closures, social distancing, mandatory masks, a 'vaccination' for every man, woman and child on the planet and severe consequences and restrictions for those that refused. Who gave him this power? The

Cult did which he serves like a little boy in short trousers doing what his daddy tells him. He and his psychopathic missus even smiled when they said that much worse was to come (what they knew was planned to come). Gates responded in the matter-of-fact way of all psychopaths to a question about the effect on the world economy of what he was doing:

> Well, it won't go to zero but it will shrink. Global GDP is probably going to take the biggest hit ever [Gates was smiling as he said this] … in my lifetime this will be the greatest economic hit. But you don't have a choice. People act as if you have a choice. People don't feel like going to the stadium when they might get infected … People are deeply affected by seeing these stats, by knowing they could be part of the transmission chain, old people, their parents and grandparents, could be affected by this, and so you don't get to say ignore what is going on here.
>
> There will be the ability to open up, particularly in rich countries, if things are done well over the next few months, but for the world at large normalcy only returns when we have largely vaccinated the entire population.

The man has no compassion or empathy. How could he when he's a psychopath like all Cult players? My own view is that even beyond that he is very seriously mentally ill. Look in his eyes and you can see this along with his crazy flailing arms. You don't do what he has done to the world population since the start of 2020 unless you are mentally ill and at the most extreme end of psychopathic. You especially don't do it when to you know, as we shall see, that cases and deaths from 'Covid' are fakery and a product of monumental figure massaging. 'These stats' that Gates referred to are based on a 'test' that's not testing for the 'virus' as he has known all along. He made his fortune with big Cult support as an infamously ruthless software salesman and now buys global control of 'health' (death) policy without the population he affects having any say. It's a breathtaking outrage. Gates talked about people being deeply affected by fear of 'Covid' when that was because of *him* and his global network lying to them minute-by-minute supported by a lying media that he seriously influences and funds to the tune of hundreds of millions. He's handed big sums to media operations including the BBC, NBC, Al Jazeera, Univision, *PBS NewsHour*,

ProPublica, National Journal, The Guardian, The Financial Times, The Atlantic, Texas Tribune, USA Today publisher Gannett, *Washington Monthly, Le Monde,* Center for Investigative Reporting, Pulitzer Center on Crisis Reporting, National Press Foundation, International Center for Journalists, Solutions Journalism Network, the Poynter Institute for Media Studies, and many more. Gates is everywhere in the 'Covid' hoax and the man must go to prison – or a mental facility – for the rest of his life and his money distributed to those he has taken such enormous psychopathic pleasure in crushing.

The Muscle

The Hunger Games global structure demands a police-military state – a fusion of the two into one force – which viciously imposes the will of the Cult on the population and protects the Cult from public rebellion. In that regard, too, the 'Covid' hoax just keeps on giving. Often unlawful, ridiculous and contradictory 'Covid' rules and regulations have been policed across the world by moronic automatons and psychopaths made faceless by face-nappy masks and acting like the Nazi SS and fascist blackshirts and brownshirts of Hitler and Mussolini. The smallest departure from the rules decreed by the psychos in government and their clueless gofers were jumped upon by the face-nappy fascists. Brutality against public protestors soon became commonplace even on girls, women and old people as the brave men with the batons – the Face-Nappies as I call them – broke up peaceful protests and handed out fines like confetti to people who couldn't earn a living let alone pay hundreds of pounds for what was once an accepted human right. Robot Face-Nappies of Nottingham police in the English East Midlands fined one group £11,000 for attending a child's birthday party. For decades I charted the transformation of law enforcement as genuine, decent officers were replaced with psychopaths and the brain dead who would happily and brutally do whatever their masters told them. Now they were let loose on the public and I would emphasise the point that none of this just happened. The step-by-step change in the dynamic between police and public was orchestrated from the shadows by

those who knew where this was all going and the same with the perceptual reframing of those in all levels of authority and official administration through 'training courses' by organisations such as Common Purpose which was created in the late 1980s and given a massive boost in Blair era Britain until it became a global phenomenon. Supposed public 'servants' began to view the population as the enemy and the same was true of the police. This was the start of the explosion of behaviour manipulation organisations and networks preparing for the all-war on the human psyche unleashed with the dawn of 2020. I will go into more detail about this later in the book because it is a core part of what is happening.

Police desecrated beauty spots to deter people gathering and arrested women for walking in the countryside alone 'too far' from their homes. We had arrogant, clueless sergeants in the Isle of Wight police where I live posting on Facebook what they insisted the population must do or else. A schoolmaster sergeant called Radford looked young enough for me to ask if his mother knew he was out, but he was posting what he *expected* people to do while a Sergeant Wilkinson boasted about fining lads for meeting in a McDonald's car park where they went to get a lockdown takeaway. Wilkinson added that he had even cancelled their order. What a pair of prats these people are and yet they have increasingly become the norm among Jackboot Johnson's Yellowshirts once known as the British police. This was the theme all over the world with police savagery common during lockdown protests in the United States, the Netherlands, and the fascist state of Victoria in Australia under its tyrannical and again moronic premier Daniel Andrews. Amazing how tyrannical and moronic tend to work as a team and the same combination could be seen across America as arrogant, narcissistic Woke governors and mayors such as Gavin Newsom (California), Andrew Cuomo (New York), Gretchen Whitmer (Michigan), Lori Lightfoot (Chicago) and Eric Garcetti (Los Angeles) did their Nazi and Stalin impressions with the full support of the compliant brutality of their enforcers in uniform as they arrested small business owners defying

fascist shutdown orders and took them to jail in ankle shackles and handcuffs. This happened to bistro owner Marlena Pavlos-Hackney in Gretchen Whitmer's fascist state of Michigan when police arrived to enforce an order by a state-owned judge for 'putting the community at risk' at a time when other states like Texas were dropping restrictions and migrants were pouring across the southern border without any 'Covid' questions at all. I'm sure there are many officers appalled by what they are ordered to do, but not nearly enough of them. If they were truly appalled they would not do it. As the months passed every opportunity was taken to have the military involved to make their presence on the streets ever more familiar and 'normal' for the longer-term goal of police-military fusion.

Another crucial element to the Hunger Games enforcement network has been encouraging the public to report neighbours and others for 'breaking the lockdown rules'. The group faced with £11,000 in fines at the child's birthday party would have been dobbed-in by a neighbour with a brain the size of a pea. The technique was most famously employed by the Stasi secret police in communist East Germany who had public informants placed throughout the population. A police chief in the UK says his force doesn't need to carry out 'Covid' patrols when they are flooded with so many calls from the public reporting other people for visiting the beach. Dorset police chief James Vaughan said people were so enthusiastic about snitching on their fellow humans they were now operating as an auxiliary arm of the police: 'We are still getting around 400 reports a week from the public, so we will respond to reports …We won't need to be doing hotspot patrols because people are very quick to pick the phone up and tell us.' Vaughan didn't say that this is a pillar of all tyrannies of whatever complexion and the means to hugely extend the reach of enforcement while spreading distrust among the people and making them wary of doing anything that might get them reported. Those narcissistic Isle of Wight sergeants Radford and Wilkinson never fail to add a link to their Facebook posts where the public can inform on their fellow slaves.

Neither would be self-aware enough to realise they were imitating the Stasi which they might well never have heard of. Government psychologists that I will expose later laid out a policy to turn communities against each other in the same way.

A coincidence? Yep, and I can knit fog

I knew from the start of the alleged pandemic that this was a Cult operation. It presented limitless potential to rapidly advance the Cult agenda and exploit manipulated fear to demand that every man, woman and child on the planet was 'vaccinated' in a process never used on humans before which infuses self-replicating *synthetic* material into human cells. Remember the plan to transform the human body from a biological to a synthetic biological state. I'll deal with the 'vaccine' (that's not actually a vaccine) when I focus on the genetic agenda. Enough to say here that mass global 'vaccination' justified by this 'new virus' set alarms ringing after 30 years of tracking these people and their methods. The 'Covid' hoax officially beginning in China was also a big red flag for reasons I will be explaining. The agenda potential was so enormous that I could dismiss any idea that the 'virus' appeared naturally. Major happenings with major agenda implications never occur without Cult involvement in making them happen. My questions were twofold in early 2020 as the media began its campaign to induce global fear and hysteria: Was this alleged infectious agent released on purpose by the Cult or did it even exist at all? I then did what I always do in these situations. I sat, observed and waited to see where the evidence and information would take me. By March and early April synchronicity was strongly – and ever more so since then – pointing me in the direction of *there is no 'virus'*. I went public on that with derision even from swathes of the alternative media that voiced a scenario that the Chinese government released the 'virus' in league with Deep State elements in the United States from a top-level bio-lab in Wuhan where the 'virus' is said to have first appeared. I looked at that possibility, but I didn't buy it for several reasons. Deaths from the 'virus' did not in any way match what they

would have been with a 'deadly bioweapon' and it is much more effective if you sell the *illusion* of an infectious agent rather than having a real one unless you can control through injection who has it and who doesn't. Otherwise you lose control of events. A made-up 'virus' gives you a blank sheet of paper on which you can make it do whatever you like and have any symptoms or mutant 'variants' you choose to add while a real infectious agent would limit you to what it actually does. A phantom disease allows you to have endless ludicrous 'studies' on the 'Covid' dollar to widen the perceived impact by inventing ever more 'at risk' groups including one study which said those who walk slowly may be almost four times more likely to die from the 'virus'. People are in psychiatric wards for less.

A real 'deadly bioweapon' can take out people in the hierarchy that are not part of the Cult, but essential to its operation. Obviously they don't want that. Releasing a real disease means you immediately lose control of it. Releasing an illusory one means you don't. Again it's vital that people are extra careful when dealing with what they want to hear. A bioweapon unleashed from a Chinese laboratory in collusion with the American Deep State may fit a conspiracy narrative, but is it true? Would it not be far more effective to use the excuse of a 'virus' to justify the real bioweapon – the 'vaccine'? That way your disease agent does not have to be transmitted and arrives directly through a syringe. I saw a French virologist Luc Montagnier quoted in the alternative media as saying he had discovered that the alleged 'new' severe acute respiratory syndrome coronavirus , or SARS-CoV-2, was made artificially and included elements of the human immunodeficiency 'virus' (HIV) and a parasite that causes malaria. SARS-CoV-2 is alleged to trigger an alleged illness called Covid-19. I remembered Montagnier's name from my research years before into claims that an HIV 'retrovirus' causes AIDs – claims that were demolished by Berkeley virologist Peter Duesberg who showed that no one had ever proved that HIV causes acquired immunodeficiency syndrome or AIDS. Claims that become accepted as fact, publicly and medically, with no proof whatsoever are an ever-recurring story that profoundly applies to

'Covid'. Nevertheless, despite the lack of proof, Montagnier's team at the Pasteur Institute in Paris had a long dispute with American researcher Robert Gallo over which of them discovered and isolated the HIV 'virus' and with *no evidence* found it to cause AIDS. You will see later that there is also no evidence that any 'virus' causes any disease or that there is even such a thing as a 'virus' in the way it is said to exist. The claim to have 'isolated' the HIV 'virus' will be presented in its real context as we come to the shocking story – and it is a story – of SARS-CoV-2 and so will Montagnier's assertion that he identified the full SARS-CoV-2 genome.

Hoax in the making

We can pick up the 'Covid' story in 2010 and the publication by the Rockefeller Foundation of a document called 'Scenarios for the Future of Technology and International Development'. The inner circle of the Rockefeller family has been serving the Cult since John D. Rockefeller (1839-1937) made his fortune with Standard Oil. It is less well known that the same Rockefeller – the Bill Gates of his day – was responsible for establishing what is now referred to as 'Big Pharma', the global network of pharmaceutical companies that make outrageous profits dispensing scalpel and drug 'medicine' and are obsessed with pumping vaccines in ever-increasing number into as many human arms and backsides as possible. John D. Rockefeller was the driving force behind the creation of the 'education' system in the United States and elsewhere specifically designed to program the perceptions of generations thereafter. The Rockefeller family donated exceptionally valuable land in New York for the United Nations building and were central in establishing the World Health Organization in 1948 as an agency of the UN which was created from the start as a Trojan horse and stalking horse for world government. Now enter Bill Gates. His family and the Rockefellers have long been extremely close and I have seen genealogy which claims that if you go back far enough the two families fuse into the same bloodline. Gates has said that the Bill and Melinda Gates Foundation was inspired by the Rockefeller Foundation and why not

when both are serving the same Cult? Major tax-exempt foundations are overwhelmingly criminal enterprises in which Cult assets fund the Cult agenda in the guise of 'philanthropy' while avoiding tax in the process. Cult operatives can become mega-rich in their role of front men and women for the psychopaths at the inner core and they, too, have to be psychopaths to knowingly serve such evil. Part of the deal is that a big percentage of the wealth gleaned from representing the Cult has to be spent advancing the ambitions of the Cult and hence you have the Rockefeller Foundation, Bill and Melinda Gates Foundation (and *so* many more) and people like George Soros with his global Open Society Foundations spending their billions in pursuit of global Cult control. Gates is a global public face of the Cult with his interventions in world affairs including Big Tech influence; a central role in the 'Covid' and 'vaccine' scam; promotion of the climate change shakedown; manipulation of education; geoengineering of the skies; and his food-control agenda as the biggest owner of farmland in America, his GMO promotion and through other means. As one writer said: 'Gates monopolizes or wields disproportionate influence over the tech industry, global health and vaccines, agriculture and food policy (including biopiracy and fake food), weather modification and other climate technologies, surveillance, education and media.' The almost limitless wealth secured through Microsoft and other not-allowed-to-fail ventures (including vaccines) has been ploughed into a long, long list of Cult projects designed to enslave the entire human race. Gates and the Rockefellers have been working as one unit with the Rockefeller-established World Health Organization leading global 'Covid' policy controlled by Gates through his mouth-piece Tedros. Gates became the WHO's biggest funder when Trump announced that the American government would cease its donations, but Biden immediately said he would restore the money when he took office in January, 2021. The Gates Foundation (the Cult) owns through limitless funding the world health system and the major players across the globe in the 'Covid' hoax.

Okay, with that background we return to that Rockefeller Foundation document of 2010 headed 'Scenarios for the Future of Technology and International Development' and its 'imaginary' epidemic of a virulent and deadly influenza strain which infected 20 percent of the global population and killed eight million in seven months. The Rockefeller scenario was that the epidemic destroyed economies, closed shops, offices and other businesses and led to governments imposing fierce rules and restrictions that included mandatory wearing of face masks and body-temperature checks to enter communal spaces like railway stations and supermarkets. The document predicted that even after the height of the Rockefeller-envisaged epidemic the authoritarian rule would continue to deal with further pandemics, transnational terrorism, environmental crises and rising poverty. Now you may think that the Rockefellers are our modern-day seers or alternatively, and rather more likely, that they well knew what was planned a few years further on. Fascism had to be imposed, you see, to 'protect citizens from risk and exposure'. The Rockefeller scenario document said:

During the pandemic, national leaders around the world flexed their authority and imposed airtight rules and restrictions, from the mandatory wearing of face masks to body-temperature checks at the entries to communal spaces like train stations and supermarkets. Even after the pandemic faded, this more authoritarian control and oversight of citizens and their activities stuck and even intensified. In order to protect themselves from the spread of increasingly global problems – from pandemics and transnational terrorism to environmental crises and rising poverty – leaders around the world took a firmer grip on power.

At first, the notion of a more controlled world gained wide acceptance and approval. Citizens willingly gave up some of their sovereignty – and their privacy – to more paternalistic states in exchange for greater safety and stability. Citizens were more tolerant, and even eager, for top-down direction and oversight, and national leaders had more latitude to impose order in the ways they saw fit.

In developed countries, this heightened oversight took many forms: biometric IDs for all citizens, for example, and tighter regulation of key industries whose stability was deemed vital to national interests. In many developed countries, enforced cooperation with a suite of new regulations and agreements slowly but steadily restored both order and, importantly, economic growth.

There we have the prophetic Rockefellers in 2010 and three years later came their paper for the Global Health Summit in Beijing, China, when government representatives, the private sector, international organisations and groups met to discuss the next 100 years of 'global health'. The Rockefeller Foundation-funded paper was called 'Dreaming the Future of Health for the Next 100 Years and more prophecy ensued as it described a dystopian future: 'The abundance of data, digitally tracking and linking people may mean the 'death of privacy' and may replace physical interaction with transient, virtual connection, generating isolation and raising questions of how values are shaped in virtual networks.' Next in the 'Covid' hoax preparation sequence came a 'table top' simulation in 2018 for another 'imaginary' pandemic of a disease called Clade X which was said to kill 900 million people. The exercise was organised by the Gates-funded Johns Hopkins University's Center for Health Security in the United States and this is the very same university that has been compiling the disgustingly and systematically erroneous global figures for 'Covid' cases and deaths. Similar Johns Hopkins health crisis scenarios have included the Dark Winter exercise in 2001 and Atlantic Storm in 2005.

Nostradamus 201

For sheer predictive genius look no further prophecy-watchers than the Bill Gates-funded Event 201 held only six weeks before the 'coronavirus pandemic' is supposed to have broken out in China and Event 201 was based on a scenario of a global 'coronavirus pandemic'. Melinda Gates, the great man's missus, told the BBC that he had 'prepared for years' for a coronavirus pandemic which told us what we already knew. Nostradamugates had predicted in a TED talk in 2015 that a pandemic was coming that would kill a lot of people and demolish the world economy. My god, the man is a machine – possibly even literally. Now here he was only weeks before the real thing funding just such a simulated scenario and involving his friends and associates at Johns Hopkins, the World Economic Forum Cult-front of Klaus Schwab, the United Nations,

Johnson & Johnson, major banks, and officials from China and the Centers for Disease Control in the United States. What synchronicity – Johns Hopkins would go on to compile the fraudulent 'Covid' figures, the World Economic Forum and Schwab would push the 'Great Reset' in response to 'Covid', the Centers for Disease Control would be at the forefront of 'Covid' policy in the United States, Johnson & Johnson would produce a 'Covid vaccine', and everything would officially start just weeks later in China. Spooky, eh? They were even accurate in creating a simulation of a 'virus' pandemic because the 'real thing' would also be a simulation. Event 201 was not an exercise preparing for something that might happen; it was a rehearsal for what those in control knew was *going* to happen and very shortly. Hours of this simulation were posted on the Internet and the various themes and responses mirrored what would soon be imposed to transform human society. News stories were inserted and what they said would be commonplace a few weeks later with still more prophecy perfection. Much discussion focused on the need to deal with misinformation and the 'anti-vax movement' which is exactly what happened when the 'virus' arrived – was said to have arrived – in the West.

Cult-owned social media banned criticism and exposure of the official 'virus' narrative and when I said there *was* no 'virus' in early April, 2020, I was banned by one platform after another including YouTube, Facebook and later Twitter. The mainstream broadcast media in Britain was in effect banned from interviewing me by the Tony-Blair-created government broadcasting censor Ofcom headed by career government bureaucrat Melanie Dawes who was appointed just as the 'virus' hoax was about to play out in January, 2020. At the same time the Ickonic media platform was using Vimeo, another ultra-Zionist-owned operation, while our own player was being created and they deleted in an instant hundreds of videos, documentaries, series and shows to confirm their unbelievable vindictiveness. We had copies, of course, and they had to be restored one by one when our player was ready. These people have no class. Sabbatian Facebook promised free advertisements for the Gates-

controlled World Health Organization narrative while deleting 'false claims and conspiracy theories' to stop 'misinformation' about the alleged coronavirus. All these responses could be seen just a short while earlier in the scenarios of Event 201. Extreme censorship was absolutely crucial for the Cult because the official story was so ridiculous and unsupportable by the evidence that it could never survive open debate and the free-flow of information and opinion. If you can't win a debate then don't have one is the Cult's approach throughout history. Facebook's little boy front man – front boy – Mark Zuckerberg equated 'credible and accurate information' with official sources and exposing their lies with 'misinformation'.

Silencing those that can see

The censorship dynamic of Event 201 is now the norm with an army of narrative-supporting 'fact-checker' organisations whose entire reason for being is to tell the public that official narratives are true and those exposing them are lying. One of the most appalling of these 'fact-checkers' is called NewsGuard founded by ultra-Zionist Americans Gordon Crovitz and Steven Brill. Crovitz is a former publisher of *The Wall Street Journal*, former Executive Vice President of Dow Jones, a member of the Council on Foreign Relations (CFR), and on the board of the American Association of Rhodes Scholars. The CFR and Rhodes Scholarships, named after Rothschild agent Cecil Rhodes who plundered the gold and diamonds of South Africa for his masters and the Cult, have featured widely in my books. NewsGuard don't seem to like me for some reason – I really can't think why – and they have done all they can to have me censored and discredited which is, to quote an old British politician, like being savaged by a dead sheep. They are, however, like all in the censorship network, very well connected and funded by organisations themselves funded by, or connected to, Bill Gates. As you would expect with anything associated with Gates NewsGuard has an offshoot called HealthGuard which 'fights online health care hoaxes'. How very kind. Somehow the NewsGuard European Managing Director Anna-Sophie Harling, a remarkably young-

looking woman with no broadcasting experience and little hands-on work in journalism, has somehow secured a position on the 'Content Board' of UK government broadcast censor Ofcom. An executive of an organisation seeking to discredit dissidents of the official narratives is making decisions for the government broadcast 'regulator' about content?? Another appalling 'fact-checker' is Full Fact funded by George Soros and global censors Google and Facebook.

It's amazing how many activists in the 'fact-checking', 'anti-hate', arena turn up in government-related positions – people like UK Labour Party activist Imran Ahmed who heads the Center for Countering Digital Hate founded by people like Morgan McSweeney, now chief of staff to the Labour Party's hapless and useless 'leader' Keir Starmer. Digital Hate – which is what it really is – uses the American spelling of Center to betray its connection to a transatlantic network of similar organisations which in 2020 shapeshifted from attacking people for 'hate' to attacking them for questioning the 'Covid' hoax and the dangers of the 'Covid vaccine'. It's just a coincidence, you understand. This is one of Imran Ahmed's hysterical statements: 'I would go beyond calling anti-vaxxers conspiracy theorists to say they are an extremist group that pose a national security risk.' No one could ever accuse this prat of understatement and he's including in that those parents who are now against vaccines after their children were damaged for life or killed by them. He's such a nice man. Ahmed does the rounds of the Woke media getting soft-ball questions from spineless 'journalists' who never ask what right he has to campaign to destroy the freedom of speech of others while he demands it for himself. There also seems to be an overrepresentation in Ofcom of people connected to the narrative-worshipping BBC. This incredible global network of narrative-support was super-vital when the 'Covid' hoax was played in the light of the mega-whopper lies that have to be defended from the spotlight cast by the most basic intelligence.

Setting the scene

The Cult plays the long game and proceeds step-by-step ensuring that everything is in place before major cards are played and they don't come any bigger than the 'Covid' hoax. The psychopaths can't handle events where the outcome isn't certain and as little as possible – preferably nothing – is left to chance. Politicians, government and medical officials who would follow direction were brought to illusory power in advance by the Cult web whether on the national stage or others like state governors and mayors of America. For decades the dynamic between officialdom, law enforcement and the public was changed from one of service to one of control and dictatorship. Behaviour manipulation networks established within government were waiting to impose the coming 'Covid' rules and regulations specifically designed to subdue and rewire the psyche of the people in the guise of protecting health. These included in the UK the Behavioural Insights Team part-owned by the British government Cabinet Office; the Scientific Pandemic Insights Group on Behaviours (SPI-B); and a whole web of intelligence and military groups seeking to direct the conversation on social media and control the narrative. Among them are the cyberwarfare (on the people) 77th Brigade of the British military which is also coordinated through the Cabinet Office as civilian and military leadership continues to combine in what they call the Fusion Doctrine. The 77th Brigade is a British equivalent of the infamous Israeli (Sabbatian) military cyberwarfare and Internet manipulation operation Unit 8200 which I expose at length in *The Trigger*. Also carefully in place were the medical and science advisers to government – many on the payroll past or present of Bill Gates – and a whole alternative structure of unelected government stood by to take control when elected parliaments were effectively closed down once the 'Covid' card was slammed on the table. The structure I have described here and so much more was installed in every major country through the Cult networks. The top-down control hierarchy looks like this: The Cult – Cult-owned Gates – the World Health Organization and Tedros – Gates-funded or controlled chief medical officers and science 'advisers' (dictators) in each country –

political 'leaders'– law enforcement – The People. Through this simple global communication and enforcement structure the policy of the Cult could be imposed on virtually the entire human population so long as they acquiesced to the fascism. With everything in place it was time for the button to be pressed in late 2019/early 2020.

These were the prime goals the Cult had to secure for its will to prevail:

1) Locking down economies, closing all but designated 'essential' businesses (Cult-owned corporations were 'essential'), and putting the population under house arrest was an imperative to destroy independent income and employment and ensure dependency on the Cult-controlled state in the Hunger Games Society. Lockdowns had to be established as the global blueprint from the start to respond to the 'virus' and followed by pretty much the entire world.

2) The global population had to be terrified into believing in a deadly 'virus' that didn't actually exist so they would unquestioningly obey authority in the belief that authority must know how best to protect them and their families. Software salesman Gates would suddenly morph into the world's health expert and be promoted as such by the Cult-owned media.

3) A method of testing that wasn't testing for the 'virus', but was only claimed to be, had to be in place to provide the illusion of 'cases' and subsequent 'deaths' that had a very different cause to the 'Covid-19' that would be scribbled on the death certificate.

4) Because there was no 'virus' and the great majority testing positive with a test not testing for the 'virus' would have no symptoms of anything the lie had to be sold that people without symptoms (without the 'virus') could still pass it on to others. This was crucial to justify for the first time quarantining – house arresting – healthy people. Without this the economy-destroying lockdown of *everybody* could not have been credibly sold.

5) The 'saviour' had to be seen as a vaccine which beyond evil drug companies were working like angels of mercy to develop as quickly as possible, with all corners cut, to save the day. The public must absolutely not know that the 'vaccine' had nothing to do with a 'virus' or that the contents were ready and waiting with a very different motive long before the 'Covid' card was even lifted from the pack.

I said in March, 2020, that the 'vaccine' would have been created way ahead of the 'Covid' hoax which justified its use and the following December an article in the New York *Intelligencer* magazine said the Moderna 'vaccine' had been 'designed' by

January, 2020. This was 'before China had even acknowledged that the disease could be transmitted from human to human, more than a week before the first confirmed coronavirus case in the United States'. The article said that by the time the first American death was announced a month later 'the vaccine had already been manufactured and shipped to the National Institutes of Health for the beginning of its Phase I clinical trial'. The 'vaccine' was actually 'designed' long before that although even with this timescale you would expect the article to ask how on earth it could have been done that quickly. Instead it asked why the 'vaccine' had not been rolled out then and not months later. Journalism in the mainstream is truly dead. I am going to detail in the next chapter why the 'virus' has never existed and how a hoax on that scale was possible, but first the foundation on which the Big Lie of 'Covid' was built.

The test that doesn't test

Fraudulent 'testing' is the bottom line of the whole 'Covid' hoax and was the means by which a 'virus' that did not exist *appeared* to exist. They could only achieve this magic trick by using a test not testing for the 'virus'. To use a test that *was* testing for the 'virus' would mean that every test would come back negative given there was no 'virus'. They chose to exploit something called the RT-PCR test invented by American biochemist Kary Mullis in the 1980s who said publicly that his PCR test … *cannot detect infectious disease*. Yes, the 'test' used worldwide to detect infectious 'Covid' to produce all the illusory 'cases' and 'deaths' compiled by Johns Hopkins and others *cannot detect infectious disease*. This fact came from the mouth of the man who invented PCR and was awarded the Nobel Prize in Chemistry in 1993 for doing so. Sadly, and incredibly conveniently for the Cult, Mullis died in August, 2019, at the age of 74 just before his test would be fraudulently used to unleash fascism on the world. He was said to have died from pneumonia which was an irony in itself. A few months later he would have had 'Covid-19' on his death certificate. I say the timing of his death was convenient because had he lived Mullis, a brilliant, honest and decent man, would have been

vociferously speaking out against the use of his test to detect 'Covid' when it was never designed, or able, to do that. I know that to be true given that Mullis made the same point when his test was used to 'detect' – not detect – HIV. He had been seriously critical of the Gallo/Montagnier claim to have isolated the HIV 'virus' and shown it to cause AIDS for which Mullis said there was no evidence. AIDS is actually not a disease but a series of diseases from which people die all the time. When they die from those *same diseases* after a positive 'test' for HIV then AIDS goes on their death certificate. I think I've heard that before somewhere. Countries instigated a policy with 'Covid' that anyone who tested positive with a test not testing for the 'virus' and died of any other cause within 28 days and even longer 'Covid-19' had to go on the death certificate. Cases have come from the test that can't test for infectious disease and the deaths are those who have died of *anything* after testing positive with a test not testing for the 'virus'. I'll have much more later about the death certificate scandal.

Mullis was deeply dismissive of the now US 'Covid' star Anthony Fauci who he said was a liar who didn't know anything about anything – 'and I would say that to his face – nothing.' He said of Fauci: 'The man thinks he can take a blood sample, put it in an electron microscope and if it's got a virus in there you'll know it – he doesn't understand electron microscopy and he doesn't understand medicine and shouldn't be in a position like he's in.' That position, terrifyingly, has made him the decider of 'Covid' fascism policy on behalf of the Cult in his role as director since 1984 of the National Institute of Allergy and Infectious Diseases (NIAID) while his record of being wrong is laughable; but being wrong, so long as it's the *right kind* of wrong, is why the Cult loves him. He'll say anything the Cult tells him to say. Fauci was made Chief Medical Adviser to the President immediately Biden took office. Biden was installed in the White House by Cult manipulation and one of his first decisions was to elevate Fauci to a position of even more control. This is a coincidence? Yes, and I identify as a flamenco dancer called Lola. How does such an incompetent criminal like Fauci remain in that

pivotal position in American health since *the 1980s*? When you serve the Cult it looks after you until you are surplus to requirements. Kary Mullis said prophetically of Fauci and his like: 'Those guys have an agenda and it's not an agenda we would like them to have … they make their own rules, they change them when they want to, and Tony Fauci does not mind going on television in front of the people who pay his salary and lie directly into the camera.' Fauci has done that almost daily since the 'Covid' hoax began. Lying is in Fauci's DNA. To make the situation crystal clear about the PCR test this is a direct quote from its inventor Kary Mullis:

> It [the PCR test] doesn't tell you that you're sick and doesn't tell you that the thing you ended up with was really going to hurt you ...'

Ask yourself why governments and medical systems the world over have been using this very test to decide who is 'infected' with the SARS-CoV-2 'virus' and the alleged disease it allegedly causes, 'Covid-19'. The answer to that question will tell you what has been going on. By the way, here's a little show-stopper – the 'new' SARS-CoV-2 'virus' was 'identified' as such right from the start using … *the PCR test not testing for the 'virus'*. If you are new to this and find that shocking then stick around. I have hardly started yet. Even worse, other 'tests', like the 'Lateral Flow Device' (LFD), are considered so useless that they have to be *confirmed* by the PCR test! Leaked emails written by Ben Dyson, adviser to UK 'Health' Secretary Matt Hancock, said they were 'dangerously unreliable'. Dyson, executive director of strategy at the Department of Health, wrote: 'As of today, someone who gets a positive LFD result in (say) London has at best a 25 per cent chance of it being a true positive, but if it is a self-reported test potentially as low as 10 per cent (on an optimistic assumption about specificity) or as low as 2 per cent (on a more pessimistic assumption).' These are the 'tests' that schoolchildren and the public are being urged to have twice a week or more and have to isolate if they get a positive. Each fake positive goes in the statistics as a 'case' no matter how ludicrously inaccurate and the

'cases' drive lockdown, masks and the pressure to 'vaccinate'. The government said in response to the email leak that the 'tests' were accurate which confirmed yet again what shocking bloody liars they are. The real false positive rate is *100 percent* as we'll see. In another 'you couldn't make it up' the UK government agreed to pay £2.8 billion to California's Innova Medical Group to supply the irrelevant lateral flow tests. The company's primary test-making centre is in China. Innova Medical Group, established in March, 2020, is owned by Pasaca Capital Inc, chaired by Chinese-American millionaire Charles Huang who was born in Wuhan.

How it works – and how it doesn't

The RT-PCR test, known by its full title of Polymerase chain reaction, is used across the world to make millions, even billions, of copies of a DNA/RNA genetic information sample. The process is called 'amplification' and means that a tiny sample of genetic material is amplified to bring out the detailed content. I stress that it is not testing for an infectious disease. It is simply amplifying a sample of genetic material. In the words of Kary Mullis: 'PCR is … just a process that's used to make a whole lot of something out of something.' To emphasise the point companies that make the PCR tests circulated around the world to 'test' for 'Covid' warn on the box that it can't be used to detect 'Covid' or infectious disease and is for research purposes only. It's okay, rest for a minute and you'll be fine. This is the test that produces the 'cases' and 'deaths' that have been used to destroy human society. All those global and national medical and scientific 'experts' demanding this destruction to 'save us' *KNOW* that the test is not testing for the 'virus' and the cases and deaths they claim to be real are an almost unimaginable fraud. Every one of them and so many others including politicians and psychopaths like Gates and Tedros must be brought before Nuremburg-type trials and jailed for the rest of their lives. The more the genetic sample is amplified by PCR the more elements of that material become sensitive to the test and by that I don't mean sensitive for a 'virus' but for elements of the genetic material which

is *naturally* in the body or relates to remnants of old conditions of various kinds lying dormant and causing no disease. Once the amplification of the PCR reaches a certain level *everyone* will test positive. So much of the material has been made sensitive to the test that everyone will have some part of it in their body. Even lying criminals like Fauci have said that once PCR amplifications pass 35 cycles everything will be a false positive that cannot be trusted for the reasons I have described. I say, like many proper doctors and scientists, that 100 percent of the 'positives' are false, but let's just go with Fauci for a moment.

He says that any amplification over 35 cycles will produce false positives and yet the US Centers for Disease Control (CDC) and Food and Drug Administration (FDA) have recommended up to *40 cycles* and the National Health Service (NHS) in Britain admitted in an internal document for staff that it was using *45 cycles* of amplification. A long list of other countries has been doing the same and at least one 'testing' laboratory has been using *50 cycles*. Have you ever heard a doctor, medical 'expert' or the media ask what level of amplification has been used to claim a 'positive'. The 'test' comes back 'positive' and so you have the 'virus', end of story. Now we can see how the government in Tanzania could send off samples from a goat and a pawpaw fruit under human names and both came back positive for 'Covid-19'. Tanzania president John Magufuli mocked the 'Covid' hysteria, the PCR test and masks and refused to import the DNA-manipulating 'vaccine'. The Cult hated him and an article sponsored by the Bill Gates Foundation appeared in the London *Guardian* in February, 2021, headed 'It's time for Africa to rein in Tanzania's anti-vaxxer president'. Well, 'reined in' he shortly was. Magufuli appeared in good health, but then, in March, 2021, he was dead at 61 from 'heart failure'. He was replaced by Samia Hassan Suhulu who is connected to Klaus Schwab's World Economic Forum and she immediately reversed Magufuli's 'Covid' policy. A sample of cola tested positive for 'Covid' with the PCR test in Germany while American actress and singer-songwriter Erykah Badu tested positive in one nostril and negative in the other. Footballer Ronaldo called

the PCR test 'bullshit' after testing positive three times and being forced to quarantine and miss matches when there was nothing wrong with him. The mantra from Tedros at the World Health Organization and national governments (same thing) has been test, test, test. They know that the more tests they can generate the more fake 'cases' they have which go on to become 'deaths' in ways I am coming to. The UK government has its Operation Moonshot planned to test multiple millions every day in workplaces and schools with free tests for everyone to use twice a week at home in line with the Cult plan from the start to make testing part of life. A government advertisement for an 'Interim Head of Asymptomatic Testing Communication' said the job included responsibility for delivering a 'communications strategy' (propaganda) 'to support the expansion of asymptomatic testing that *'normalises testing as part of everyday life*'. More tests means more fake 'cases', 'deaths' and fascism. I have heard of, and from, many people who booked a test, couldn't turn up, and yet got a positive result through the post for a test they'd never even had. The whole thing is crazy, but for the Cult there's method in the madness. Controlling and manipulating the level of amplification of the test means the authorities can control whenever they want the number of apparent 'cases' and 'deaths'. If they want to justify more fascist lockdown and destruction of livelihoods they keep the amplification high. If they want to give the illusion that lockdowns and the 'vaccine' are working then they lower the amplification and 'cases' and 'deaths' will appear to fall. In January, 2021, the Cult-owned World Health Organization suddenly warned laboratories about over-amplification of the test and to lower the threshold. Suddenly headlines began appearing such as: 'Why ARE "Covid" cases plummeting?' This was just when the vaccine rollout was underway and I had predicted months before they would make cases appear to fall through amplification tampering when the 'vaccine' came. These people are so predictable.

Cow vaccines?

The question must be asked of what is on the test swabs being poked far up the nose of the population to the base of the brain? A nasal swab punctured one woman's brain and caused it to leak fluid. Most of these procedures are being done by people with little training or medical knowledge. Dr Lorraine Day, former orthopaedic trauma surgeon and Chief of Orthopaedic Surgery at San Francisco General Hospital, says the tests are really a *'vaccine'*. Cows have long been vaccinated this way. She points out that masks have to cover the nose and the mouth where it is claimed the 'virus' exists in saliva. Why then don't they take saliva from the mouth as they do with a DNA test instead of pushing a long swab up the nose towards the brain? The ethmoid bone separates the nasal cavity from the brain and within that bone is the cribriform plate. Dr Day says that when the swab is pushed up against this plate and twisted the procedure is 'depositing things back there'. She claims that among these 'things' are nanoparticles that can enter the brain. Researchers have noted that a team at the Gates-funded Johns Hopkins have designed tiny, star-shaped micro-devices that can latch onto intestinal mucosa and release drugs into the body. Mucosa is the thin skin that covers the inside surface of parts of the body such as *the nose* and mouth and produces mucus to protect them. The Johns Hopkins micro-devices are called 'theragrippers' and were 'inspired' by a parasitic worm that digs its sharp teeth into a host's intestines. Nasal swabs are also coated in the sterilisation agent ethylene oxide. The US National Cancer Institute posts this explanation on its website:

> At room temperature, ethylene oxide is a flammable colorless gas with a sweet odor. It is used primarily to produce other chemicals, including antifreeze. In smaller amounts, ethylene oxide is used as a pesticide and a sterilizing agent. The ability of ethylene oxide to damage DNA makes it an effective sterilizing agent but also accounts for its cancer-causing activity.

The Institute mentions lymphoma and leukaemia as cancers most frequently reported to be associated with occupational exposure to ethylene oxide along with stomach and breast cancers. How does anyone think this is going to work out with the constant testing

regime being inflicted on adults and children at home and at school that will accumulate in the body anything that's on the swab?

Doctors know best

It is vital for people to realise that 'hero' doctors 'know' only what the Big Pharma-dominated medical authorities tell them to 'know' and if they refuse to 'know' what they are told to 'know' they are out the door. They are mostly not physicians or healers, but repeaters of the official narrative – or else. I have seen alleged professional doctors on British television make shocking statements that we are supposed to take seriously. One called 'Dr' Amir Khan, who is actually telling patients how to respond to illness, said that men could take the birth pill to 'help slow down the effects of Covid-19'. In March, 2021, another ridiculous 'Covid study' by an American doctor proposed injecting men with the female sex hormone progesterone as a 'Covid' treatment. British doctor Nighat Arif told the BBC that face coverings were now going to be part of ongoing normal. Yes, the vaccine protects you, she said (evidence?) … but the way to deal with viruses in the community was always going to come down to hand washing, face covering and keeping a physical distance. That's not what we were told before the 'vaccine' was circulating. Arif said she couldn't imagine ever again going on the underground or in a lift without a mask. I was just thanking my good luck that she was not my doctor when she said – in March, 2021 – that if 'we are *behaving* and we are doing all the right things' she thought we could 'have our nearest and dearest around us at home … around *Christmas* and N*ew Year!* Her patronising delivery was the usual school teacher talking to six-year-olds as she repeated every government talking point and probably believed them all. If we have learned anything from the 'Covid' experience surely it must be that humanity's perception of doctors needs a fundamental rethink. NHS 'doctor' Sara Kayat told her television audience that the 'Covid vaccine' would '100 percent prevent hospitalisation and death'. Not even Big Pharma claimed that. We have to stop taking 'experts' at their word without question when so many of them are

clueless and only repeating the party line on which their careers depend. That is not to say there are not brilliants doctors – there are and I have spoken to many of them since all this began – but you won't see them in the mainstream media or quoted by the psychopaths and yes-people in government.

Remember the name – Christian Drosten

German virologist Christian Drosten, Director of Charité Institute of Virology in Berlin, became a national star after the pandemic hoax began. He was feted on television and advised the German government on 'Covid' policy. Most importantly to the wider world Drosten led a group that produced the 'Covid' testing protocol for the PCR test. What a remarkable feat given the PCR cannot test for infectious disease and even more so when you think that Drosten said that his method of testing for SARS-CoV-2 was developed 'without having virus material available'. *He developed a test for a 'virus' that he didn't have and had never seen*. Let that sink in as you survey the global devastation that came from what he did. The whole catastrophe of Drosten's 'test' was based on the alleged genetic sequence published by Chinese scientists on the Internet. We will see in the next chapter that this alleged 'genetic sequence' has never been produced by China or anyone and cannot be when there *is no* SARS-CoV-2. Drosten, however, doesn't seem to let little details like that get in the way. He was the lead author with Victor Corman from the same Charité Hospital of the paper 'Detection of 2019 novel coronavirus (2019-nCoV) by real-time PCR' published in a magazine called *Eurosurveillance*. This became known as the Corman-Drosten paper. In November, 2020, with human society devastated by the effects of the Corman-Drosten test baloney, the protocol was publicly challenged by 22 international scientists and independent researchers from Europe, the United States, and Japan. Among them were senior molecular geneticists, biochemists, immunologists, and microbiologists. They produced a document headed 'External peer review of the RTPCR test to detect SARS-Cov-2 Reveals 10 Major Flaws At The Molecular and Methodological Level: Consequences

For False-Positive Results'. The flaws in the Corman-Drosten test included the following:

- The test is non-specific because of erroneous design
- Results are enormously variable
- The test is unable to discriminate between the whole 'virus' and viral fragments
- It doesn't have positive or negative controls
- The test lacks a standard operating procedure
- It is unsupported by proper peer view

The scientists said the PCR 'Covid' testing protocol was not founded on science and they demanded the Corman-Drosten paper be retracted by *Eurosurveillance*. They said all present and previous Covid deaths, cases, and 'infection rates' should be subject to a massive retroactive inquiry. Lockdowns and travel restrictions should be reviewed and relaxed and those diagnosed through PCR to have 'Covid-19' should not be forced to isolate. Dr Kevin Corbett, a health researcher and nurse educator with a long academic career producing a stream of peer-reviewed publications at many UK universities, made the same point about the PCR test debacle. He said of the scientists' conclusions: 'Every scientific rationale for the development of that test has been totally destroyed by this paper. It's like Hiroshima/Nagasaki to the Covid test.' He said that China hadn't given them an isolated 'virus' when Drosten developed the test. Instead they had developed the test from *a sequence in a gene bank*.' Put another way … *they made it up*! The scientists were supported in this contention by a Portuguese appeals court which ruled in November, 2020, that PCR tests are unreliable and it is unlawful to quarantine people based solely on a PCR test. The point about China not providing an isolated virus must be true when the 'virus' has never been isolated to this day and the consequences of that will become clear. Drosten and company produced this useless 'protocol' right on cue in January, 2020, just as the 'virus' was said to

be moving westward and it somehow managed to successfully pass a peer-review in 24 hours. In other words there was no peer-review for a test that would be used to decide who had 'Covid' and who didn't across the world. The Cult-created, Gates-controlled World Health Organization immediately recommended all its nearly 200 member countries to use the Drosten PCR protocol to detect 'cases' and 'deaths'. The sting was underway and it continues to this day.

So who is this Christian Drosten that produced the means through which death, destruction and economic catastrophe would be justified? His education background, including his doctoral thesis, would appear to be somewhat shrouded in mystery and his track record is dire as with another essential player in the 'Covid' hoax, the Gates-funded Professor Neil Ferguson at the Gates-funded Imperial College in London of whom more shortly. Drosten predicted in 2003 that the alleged original SARS 'virus' (SARS-1') was an epidemic that could have serious effects on economies and an effective vaccine would take at least two years to produce. Drosten's answer to every alleged 'outbreak' is a vaccine which you won't be shocked to know. What followed were just 774 official deaths worldwide and none in Germany where there were only nine cases. That is even if you believe there ever was a SARS 'virus' when the evidence is zilch and I will expand on this in the next chapter. Drosten claims to be co-discoverer of 'SARS-1' and developed a test for it in 2003. He was screaming warnings about 'swine flu' in 2009 and how it was a widespread infection far more severe than any dangers from a vaccine could be and people should get vaccinated. It would be helpful for Drosten's vocal chords if he simply recorded the words 'the virus is deadly and you need to get vaccinated' and copies could be handed out whenever the latest made-up threat comes along. Drosten's swine flu epidemic never happened, but Big Pharma didn't mind with governments spending hundreds of millions on vaccines that hardly anyone bothered to use and many who did wished they hadn't. A study in 2010 revealed that the risk of dying from swine flu, or H1N1, was no higher than that of the annual seasonal flu which is what at least most of 'it' really was as in

the case of 'Covid-19'. A media investigation into Drosten asked how with such a record of inaccuracy he could be *the* government adviser on these issues. The answer to that question is the same with Drosten, Ferguson and Fauci – they keep on giving the authorities the 'conclusions' and 'advice' they want to hear. Drosten certainly produced the goods for them in January, 2020, with his PCR protocol garbage and provided the foundation of what German internal medicine specialist Dr Claus Köhnlein, co-author of *Virus Mania*, called the 'test pandemic'. The 22 scientists in the *Eurosurveillance* challenge called out conflicts of interest within the Drosten 'protocol' group and with good reason. Olfert Landt, a regular co-author of Drosten 'studies', owns the biotech company TIB Molbiol Syntheselabor GmbH in Berlin which manufactures and sells the tests that Drosten and his mates come up with. They have done this with SARS, Enterotoxigenic E. coli (ETEC), MERS, Zika 'virus', yellow fever, and now 'Covid'. Landt told the *Berliner Zeitung* newspaper:

> The testing, design and development came from the Charité [Drosten and Corman]. We simply implemented it immediately in the form of a kit. And if we don't have the virus, which originally only existed in Wuhan, we can make a synthetic gene to simulate the genome of the virus. That's what we did very quickly.

This is more confirmation that the Drosten test was designed without access to the 'virus' and only a synthetic simulation which is what SARS-CoV-2 really is – a computer-generated synthetic fiction. It's quite an enterprise they have going here. A Drosten team decides what the test for something should be and Landt's biotech company flogs it to governments and medical systems across the world. His company must have made an absolute fortune since the 'Covid' hoax began. Dr Reiner Fuellmich, a prominent German consumer protection trial lawyer in Germany and California, is on Drosten's case and that of Tedros at the World Health Organization for crimes against humanity with a class-action lawsuit being prepared in the United States and other legal action in Germany.

Why China?

Scamming the world with a 'virus' that doesn't exist would seem impossible on the face of it, but not if you have control of the relatively few people that make policy decisions and the great majority of the global media. Remember it's not about changing 'real' reality it's about controlling *perception* of reality. You don't have to make something happen you only have make people *believe* that it's happening. Renegade Minds understand this and are therefore much harder to swindle. 'Covid-19' is not a 'real' 'virus'. It's a mind virus, like a computer virus, which has infected the minds, not the bodies, of billions. It all started, publically at least, in China and that alone is of central significance. The Cult was behind the revolution led by its asset Mao Zedong, or Chairman Mao, which established the People's Republic of China on October 1st, 1949. It should have been called The Cult's Republic of China, but the name had to reflect the recurring illusion that vicious dictatorships are run by and for the people (see all the 'Democratic Republics' controlled by tyrants). In the same way we have the 'Biden' Democratic Republic of America officially ruled by a puppet tyrant (at least temporarily) on behalf of Cult tyrants. The creation of Mao's merciless communist/fascist dictatorship was part of a frenzy of activity by the Cult at the conclusion of World War Two which, like the First World War, it had instigated through its assets in Germany, Britain, France, the United States and elsewhere. Israel was formed in 1948; the Soviet Union expanded its 'Iron Curtain' control, influence and military power with the Warsaw Pact communist alliance in 1955; the United Nations was formed in 1945 as a Cult precursor to world government; and a long list of world bodies would be established including the World Health Organization (1948), World Trade Organization (1948 under another name until 1995), International Monetary Fund (1945) and World Bank (1944). Human society was redrawn and hugely centralised in the global Problem-Reaction-Solution that was World War Two. All these changes were significant. Israel would become the headquarters of the Sabbatians

and the revolution in China would prepare the ground and control system for the events of 2019/2020.

Renegade Minds know there are no borders except for public consumption. The Cult is a seamless, borderless global entity and to understand the game we need to put aside labels like borders, nations, countries, communism, fascism and democracy. These delude the population into believing that countries are ruled within their borders by a government of whatever shade when these are mere agencies of a global power. America's illusion of democracy and China's communism/fascism are subsidiaries – vehicles – for the same agenda. We may hear about conflict and competition between America and China and on the lower levels that will be true; but at the Cult level they are branches of the same company in the way of the McDonald's example I gave earlier. I have tracked in the books over the years support by US governments of both parties for Chinese Communist Party infiltration of American society through allowing the sale of land, even military facilities, and the acquisition of American business and university influence. All this is underpinned by the infamous stealing of intellectual property and technological know-how. Cult-owned Silicon Valley corporations waive their fraudulent 'morality' to do business with human-rights-free China; Cult-controlled Disney has become China's PR department; and China in effect owns 'American' sports such as basketball which depends for much of its income on Chinese audiences. As a result any sports player, coach or official speaking out against China's horrific human rights record is immediately condemned or fired by the China-worshipping National Basketball Association. One of the first acts of China-controlled Biden was to issue an executive order telling federal agencies to stop making references to the 'virus' by the 'geographic location of its origin'. Long-time Congressman Jerry Nadler warned that criticising China, America's biggest rival, leads to hate crimes against Asian people in the United States. So shut up you bigot. China is fast closing in on Israel as a country that must not be criticised which is apt, really, given that Sabbatians control them both. The two countries have

developed close economic, military, technological and strategic ties which include involvement in China's 'Silk Road' transport and economic initiative to connect China with Europe. Israel was the first country in the Middle East to recognise the establishment of Mao's tyranny in 1950 months after it was established.

Project Wuhan – the 'Covid' Psyop

I emphasise again that the Cult plays the long game and what is happening to the world today is the result of centuries of calculated manipulation following a script to take control step-by-step of every aspect of human society. I will discuss later the common force behind all this that has spanned those centuries and thousands of years if the truth be told. Instigating the Mao revolution in China in 1949 with a 2020 'pandemic' in mind is not only how they work – the 71 years between them is really quite short by the Cult's standards of manipulation preparation. The reason for the Cult's Chinese revolution was to create a fiercely-controlled environment within which an extreme structure for human control could be incubated to eventually be unleashed across the world. We have seen this happen since the 'pandemic' emerged from China with the Chinese control-structure founded on AI technology and tyrannical enforcement sweep across the West. Until the moment when the Cult went for broke in the West and put its fascism on public display Western governments had to pay some lip-service to freedom and democracy to not alert too many people to the tyranny-in-the-making. Freedoms were more subtly eroded and power centralised with covert government structures put in place waiting for the arrival of 2020 when that smokescreen of 'freedom' could be dispensed with. The West was not able to move towards tyranny before 2020 anything like as fast as China which was created as a tyranny and had no limits on how fast it could construct the Cult's blueprint for global control. When the time came to impose that structure on the world it was the same Cult-owned Chinese communist/fascist government that provided the excuse – the 'Covid pandemic'. It was absolutely crucial to the Cult plan for the Chinese response to the 'pandemic' –

draconian lockdowns of the entire population – to become the blueprint that Western countries would follow to destroy the livelihoods and freedom of their people. This is why the Cult-owned, Gates-owned, WHO Director-General Tedros said early on:

The Chinese government is to be congratulated for the extraordinary measures it has taken to contain the outbreak. China is actually setting a new standard for outbreak response and it is not an exaggeration.

Forbes magazine said of China: '… those measures protected untold millions from getting the disease'. The Rockefeller Foundation 'epidemic scenario' document in 2010 said 'prophetically':

However, a few countries did fare better – China in particular. The Chinese government's quick imposition and enforcement of mandatory quarantine for all citizens, as well as its instant and near-hermetic sealing off of all borders, saved millions of lives, stopping the spread of the virus far earlier than in other countries and enabling a swifter post-pandemic recovery.

Once again – *spooky*.

The first official story was the 'bat theory' or rather the bat diversion. The source of the 'virus outbreak' we were told was a ''wet market' in Wuhan where bats and other animals are bought and eaten in horrifically unhygienic conditions. Then another story emerged through the alternative media that the 'virus' had been released on purpose or by accident from a BSL-4 (biosafety level 4) laboratory in Wuhan not far from the wet market. The lab was reported to create and work with lethal concoctions and bioweapons. Biosafety level 4 is the highest in the World Health Organization system of safety and containment. Renegade Minds are aware of what I call designer manipulation. The ideal for the Cult is for people to buy its prime narrative which in the opening salvoes of the 'pandemic' was the wet market story. It knows, however, that there is now a considerable worldwide alternative media of researchers sceptical of anything governments say and they are often given a version of events in a form they can perceive as credible while misdirecting them from the real truth. In this case let them

think that the conspiracy involved is a 'bioweapon virus' released from the Wuhan lab to keep them from the real conspiracy – *there is no 'virus'*. The WHO's current position on the source of the outbreak at the time of writing appears to be: 'We haven't got a clue, mate.' This is a good position to maintain mystery and bewilderment. The inner circle will know where the 'virus' came from – *nowhere*. The bottom line was to ensure the public believed there *was* a 'virus' and it didn't much matter if they thought it was natural or had been released from a lab. The belief that there was a 'deadly virus' was all that was needed to trigger global panic and fear. The population was terrified into handing their power to authority and doing what they were told. They had to or they were 'all gonna die'.

In March, 2020, information began to come my way from real doctors and scientists and my own additional research which had my intuition screaming: 'Yes, that's it! *There is no virus*.' The 'bioweapon' was not the 'virus'; it was the *'vaccine'* already being talked about that would be the bioweapon. My conclusion was further enhanced by happenings in Wuhan. The 'virus' was said to be sweeping the city and news footage circulated of people collapsing in the street (which they've never done in the West with the same 'virus'). The Chinese government was building 'new hospitals' in a matter of ten days to 'cope with demand' such was the virulent nature of the 'virus'. Yet in what seemed like no time the 'new hospitals' closed – even if they even opened – and China declared itself 'virus-free'. It was back to business as usual. This was more propaganda to promote the Chinese draconian lockdowns in the West as the way to 'beat the virus'. Trouble was that we subsequently had lockdown after lockdown, but never business as usual. As the people of the West and most of the rest of the world were caught in an ever-worsening spiral of lockdown, social distancing, masks, isolated old people, families forced apart, and livelihood destruction, it was party-time in Wuhan. Pictures emerged of thousands of people enjoying pool parties and concerts. It made no sense until you realised there never was a 'virus' and the

whole thing was a Cult set-up to transform human society out of one its major global strongholds – China.

How is it possible to deceive virtually the entire world population into believing there is a deadly virus when there is not even a 'virus' let alone a deadly one? It's nothing like as difficult as you would think and that's clearly true because it happened.

Postscript: See end of book Postscript for more on the 'Wuhan lab virus release' story which the authorities and media were pushing heavily in the summer of 2021 to divert attention from the truth that the 'Covid virus' is pure invention.

CHAPTER FIVE

There *is no* 'virus'

You can fool some of the people all of the time, and all of the people some of the time, but you cannot fool all of the people all of the time
Abraham Lincoln

The greatest form of mind control is repetition. The more you repeat the same mantra of alleged 'facts' the more will accept them to be true. It becomes an 'everyone knows that, mate'. If you can also censor any other version or alternative to your alleged 'facts' you are pretty much home and cooking.

By the start of 2020 the Cult owned the global mainstream media almost in its entirety to spew out its 'Covid' propaganda and ignore or discredit any other information and view. Cult-owned social media platforms in Cult-owned Silicon Valley were poised and ready to unleash a campaign of ferocious censorship to obliterate all but the official narrative. To complete the circle many demands for censorship by Silicon Valley were led by the mainstream media as 'journalists' became full-out enforcers for the Cult both as propagandists and censors. Part of this has been the influx of young people straight out of university who have become 'journalists' in significant positions. They have no experience and a headful of programmed perceptions from their years at school and university at a time when today's young are the most perceptually-targeted generations in known human history given the insidious impact of technology. They enter the media perceptually prepared and ready to repeat the narratives of the system that programmed them to

repeat its narratives. The BBC has a truly pathetic 'specialist disinformation reporter' called Marianna Spring who fits this bill perfectly. She is clueless about the world, how it works and what is really going on. Her role is to discredit anyone doing the job that a proper journalist would do and system-serving hacks like Spring wouldn't dare to do or even see the need to do. They are too busy licking the arse of authority which can never be wrong and, in the case of the BBC propaganda programme, *Panorama*, contacting payments systems such as PayPal to have a donations page taken down for a film company making documentaries questioning vaccines. Even the BBC soap opera *EastEnders* included a disgracefully biased scene in which an inarticulate white working class woman was made to look foolish for questioning the 'vaccine' while a well-spoken black man and Asian woman promoted the government narrative. It ticked every BBC box and the fact that the black and minority community was resisting the 'vaccine' had nothing to do with the way the scene was written. The BBC has become a disgusting tyrannical propaganda and censorship operation that should be defunded and disbanded and a free media take its place with a brief to stop censorship instead of demanding it. A BBC 'interview' with Gates goes something like: 'Mr Gates, sir, if I can call you sir, would you like to tell our audience why you are such a great man, a wonderful humanitarian philanthropist, and why you should absolutely be allowed as a software salesman to decide health policy for approaching eight billion people? Thank you, sir, please sir.' Propaganda programming has been incessant and merciless and when all you hear is the same story from the media, repeated by those around you who have only heard the same story, is it any wonder that people on a grand scale believe absolute mendacious garbage to be true? You are about to see, too, why this level of information control is necessary when the official 'Covid' narrative is so nonsensical and unsupportable by the evidence.

Structure of Deceit

The pyramid structure through which the 'Covid' hoax has been manifested is very simple and has to be to work. As few people as possible have to be involved with full knowledge of what they are doing – and why – or the real story would get out. At the top of the pyramid are the inner core of the Cult which controls Bill Gates who, in turn, controls the World Health Organization through his pivotal funding and his puppet Director-General mouthpiece, Tedros. Before he was appointed Tedros was chair of the Gates-founded Global Fund to 'fight against AIDS, tuberculosis and malaria', a board member of the Gates-funded 'vaccine alliance' GAVI, and on the board of another Gates-funded organisation. Gates owns him and picked him for a specific reason – Tedros is a crook and worse. 'Dr' Tedros (he's not a medical doctor, the first WHO chief not to be) was a member of the tyrannical Marxist government of Ethiopia for decades with all its human rights abuses. He has faced allegations of corruption and misappropriation of funds and was exposed three times for covering up cholera epidemics while Ethiopia's health minister. Tedros appointed the mass-murdering genocidal Zimbabwe dictator Robert Mugabe as a WHO goodwill ambassador for public health which, as with Tedros, is like appointing a psychopath to run a peace and love campaign. The move was so ridiculous that he had to drop Mugabe in the face of widespread condemnation. American economist David Steinman, a Nobel peace prize nominee, lodged a complaint with the International Criminal Court in The Hague over alleged genocide by Tedros when he was Ethiopia's foreign minister. Steinman says Tedros was a 'crucial decision maker' who directed the actions of Ethiopia's security forces from 2013 to 2015 and one of three officials in charge when those security services embarked on the 'killing' and 'torturing' of Ethiopians. You can see where Tedros is coming from and it's sobering to think that he has been the vehicle for Gates and the Cult to direct the global response to 'Covid'. Think about that. A psychopathic Cult dictates to psychopath Gates who dictates to psychopath Tedros who dictates how countries of the world must respond to a 'Covid virus' never scientifically shown to exist. At the same time psychopathic Cult-owned Silicon Valley information

giants like Google, YouTube, Facebook and Twitter announced very early on that they would give the Cult/Gates/Tedros/WHO version of the narrative free advertising and censor those who challenged their intelligence-insulting, mendacious story.

The next layer in the global 'medical' structure below the Cult, Gates and Tedros are the chief medical officers and science 'advisers' in each of the WHO member countries which means virtually all of them. Medical officers and arbiters of science (they're not) then take the WHO policy and recommended responses and impose them on their country's population while the political 'leaders' say they are deciding policy (they're clearly not) by 'following the science' on the advice of the 'experts' – the same medical officers and science 'advisers' (dictators). In this way with the rarest of exceptions the entire world followed the same policy of lockdown, people distancing, masks and 'vaccines' dictated by the psychopathic Cult, psychopathic Gates and psychopathic Tedros who we are supposed to believe give a damn about the health of the world population they are seeking to enslave. That, amazingly, is all there is to it in terms of crucial decision-making. Medical staff in each country then follow like sheep the dictates of the shepherds at the top of the national medical hierarchies – chief medical officers and science 'advisers' who themselves follow like sheep the shepherds of the World Health Organization and the Cult. Shepherds at the national level often have major funding and other connections to Gates and his Bill and Melinda Gates Foundation which carefully hands out money like confetti at a wedding to control the entire global medical system from the WHO down.

Follow the money

Christopher Whitty, Chief Medical Adviser to the UK Government at the centre of 'virus' policy, a senior adviser to the government's Scientific Advisory Group for Emergencies (SAGE), and Executive Board member of the World Health Organization, was gifted a grant of $40 million by the Bill and Melinda Gates Foundation for malaria research in Africa. The BBC described the unelected Whitty as 'the

official who will probably have the greatest impact on our everyday lives of any individual policymaker in modern times' and so it turned out. What Gates and Tedros have said Whitty has done like his equivalents around the world. Patrick Vallance, co-chair of SAGE and the government's Chief Scientific Adviser, is a former executive of Big Pharma giant GlaxoSmithKline with its fundamental financial and business connections to Bill Gates. In September, 2020, it was revealed that Vallance owned a deferred bonus of shares in GlaxoSmithKline worth £600,000 while the company was 'developing' a 'Covid vaccine'. Move along now – nothing to see here – what could possibly be wrong with that? Imperial College in London, a major player in 'Covid' policy in Britain and elsewhere with its 'Covid-19' Response Team, is funded by Gates and has big connections to China while the now infamous Professor Neil Ferguson, the useless 'computer modeller' at Imperial College is also funded by Gates. Ferguson delivered the dramatically inaccurate excuse for the first lockdowns (much more in the next chapter). The Institute for Health Metrics and Evaluation (IHME) in the United States, another source of outrageously false 'Covid' computer models to justify lockdowns, is bankrolled by Gates who is a vehement promotor of lockdowns. America's version of Whitty and Vallance, the again now infamous Anthony Fauci, has connections to 'Covid vaccine' maker Moderna as does Bill Gates through funding from the Bill and Melinda Gates Foundation. Fauci is director of the National Institute of Allergy and Infectious Diseases (NIAID), a major recipient of Gates money, and they are very close. Deborah Birx who was appointed White House Coronavirus Response Coordinator in February, 2020, is yet another with ties to Gates. Everywhere you look at the different elements around the world behind the coordination and decision making of the 'Covid' hoax there is Bill Gates and his money. They include the World Health Organization; Centers for Disease Control (CDC) in the United States; National Institutes of Health (NIH) of Anthony Fauci; Imperial College and Neil Ferguson; the London School of Hygiene where Chris Whitty worked; Regulatory agencies like the UK Medicines & Healthcare products Regulatory Agency (MHRA)

which gave emergency approval for 'Covid vaccines'; Wellcome Trust; GAVI, the Vaccine Alliance; the Coalition for Epidemic Preparedness Innovations (CEPI); Johns Hopkins University which has compiled the false 'Covid' figures; and the World Economic Forum. A Nationalfile.com article said:

> Gates has a lot of pull in the medical world, he has a multi-million dollar relationship with Dr. Fauci, and Fauci originally took the Gates line supporting vaccines and casting doubt on [the drug hydroxychloroquine]. Coronavirus response team member Dr. Deborah Birx, appointed by former president Obama to serve as United States Global AIDS Coordinator, also sits on the board of a group that has received billions from Gates' foundation, and Birx reportedly used a disputed Bill Gates-funded model for the White House's Coronavirus effort. Gates is a big proponent for a population lockdown scenario for the Coronavirus outbreak.

Another funder of Moderna is the Defense Advanced Research Projects Agency (DARPA), the technology-development arm of the Pentagon and one of the most sinister organisations on earth. DARPA had a major role with the CIA covert technology-funding operation In-Q-Tel in the development of Google and social media which is now at the centre of global censorship. Fauci and Gates are extremely close and openly admit to talking regularly about 'Covid' policy, but then why wouldn't Gates have a seat at every national 'Covid' table after his Foundation committed $1.75 billion to the 'fight against Covid-19'. When passed through our Orwellian Translation Unit this means that he has bought and paid for the Cult-driven 'Covid' response worldwide. Research the major 'Covid' response personnel in your own country and you will find the same Gates funding and other connections again and again. Medical and science chiefs following World Health Organization 'policy' sit atop a medical hierarchy in their country of administrators, doctors and nursing staff. These 'subordinates' are told they must work and behave in accordance with the policy delivered from the 'top' of the national 'health' pyramid which is largely the policy delivered by the WHO which is the policy delivered by Gates and the Cult. The whole 'Covid' narrative has been imposed on medical staff by a climate of fear although great numbers don't even need that to comply. They do so through breathtaking levels of ignorance and

include doctors who go through life simply repeating what Big Pharma and their hierarchical masters tell them to say and believe. No wonder Big Pharma 'medicine' is one of the biggest killers on Planet Earth.

The same top-down system of intimidation operates with regard to the Cult Big Pharma cartel which also dictates policy through national and global medical systems in this way. The Cult and Big Pharma agendas are the same because the former controls and owns the latter. 'Health' administrators, doctors, and nursing staff are told to support and parrot the dictated policy or they will face consequences which can include being fired. How sad it's been to see medical staff meekly repeating and imposing Cult policy without question and most of those who can see through the deceit are only willing to speak anonymously off the record. They know what will happen if their identity is known. This has left the courageous few to expose the lies about the 'virus', face masks, overwhelmed hospitals that aren't, and the dangers of the 'vaccine' that isn't a vaccine. When these medical professionals and scientists, some renowned in their field, have taken to the Internet to expose the truth their articles, comments and videos have been deleted by Cult-owned Facebook, Twitter and YouTube. What a real head-shaker to see YouTube videos with leading world scientists and highly qualified medical specialists with an added link underneath to the notorious Cult propaganda website *Wikipedia* to find the 'facts' about the same subject.

HIV – the 'Covid' trial-run

I'll give you an example of the consequences for health and truth that come from censorship and unquestioning belief in official narratives. The story was told by PCR inventor Kary Mullis in his book *Dancing Naked in the Mind Field*. He said that in 1984 he accepted as just another scientific fact that Luc Montagnier of France's Pasteur Institute and Robert Gallo of America's National Institutes of Health had independently discovered that a 'retrovirus' dubbed HIV (human immunodeficiency virus) caused AIDS. They

were, after all, Mullis writes, specialists in retroviruses. This is how the medical and science pyramids work. Something is announced or *assumed* and then becomes an everybody-knows-that purely through repetition of the assumption as if it is fact. Complete crap becomes accepted truth with no supporting evidence and only repetition of the crap. This is how a 'virus' that doesn't exist became the 'virus' that changed the world. The HIV-AIDS fairy story became a multi-billion pound industry and the media poured out propaganda terrifying the world about the deadly HIV 'virus' that caused the lethal AIDS. By then Mullis was working at a lab in Santa Monica, California, to detect retroviruses with his PCR test in blood donations received by the Red Cross. In doing so he asked a virologist where he could find a reference for HIV being the cause of AIDS. 'You don't need a reference,' the virologist said … *'Everybody knows it.'* Mullis said he wanted to quote a reference in the report he was doing and he said he felt a little funny about not knowing the source of such an important discovery when everyone else seemed to. The virologist suggested he cite a report by the Centers for Disease Control and Prevention (CDC) on morbidity and mortality. Mullis read the report, but it only said that an organism had been identified and did not say how. The report did not identify the original scientific work. Physicians, however, *assumed* (key recurring theme) that if the CDC was convinced that HIV caused AIDS then proof must exist. Mullis continues:

I did computer searches. Neither Montagnier, Gallo, nor anyone else had published papers describing experiments which led to the conclusion that HIV probably caused AIDS. I read the papers in Science for which they had become well known as AIDS doctors, but all they had said there was that they had found evidence of a past infection by something which was probably HIV in some AIDS patients.

They found antibodies. Antibodies to viruses had always been considered evidence of past disease, not present disease. Antibodies signaled that the virus had been defeated. The patient had saved himself. There was no indication in these papers that this virus caused a disease. They didn't show that everybody with the antibodies had the disease. In fact they found some healthy people with antibodies.

Mullis asked why their work had been published if Montagnier and Gallo hadn't really found this evidence, and why had they been fighting so hard to get credit for the discovery? He says he was hesitant to write 'HIV is the probable cause of AIDS' until he found published evidence to support that. 'Tens of thousands of scientists and researchers were spending billions of dollars a year doing research based on this idea,' Mullis writes. 'The reason had to be there somewhere; otherwise these people would not have allowed their research to settle into one narrow channel of investigation.' He said he lectured about PCR at numerous meetings where people were always talking about HIV and he asked them how they knew that HIV was the cause of AIDS:

> Everyone said something. Everyone had the answer at home, in the office, in some drawer. They all knew, and they would send me the papers as soon as they got back. But I never got any papers. Nobody ever sent me the news about how AIDS was caused by HIV.

Eventually Mullis was able to ask Montagnier himself about the reference proof when he lectured in San Diego at the grand opening of the University of California AIDS Research Center. Mullis says this was the last time he would ask his question without showing anger. Montagnier said he should reference the CDC report. 'I read it', Mullis said, and it didn't answer the question. 'If Montagnier didn't know the answer who the hell did?' Then one night Mullis was driving when an interview came on National Public Radio with Peter Duesberg, a prominent virologist at Berkeley and a California Scientist of the Year. Mullis says he finally understood why he could not find references that connected HIV to AIDS – *there weren't any!* No one had ever proved that HIV causes AIDS even though it had spawned a multi-billion pound global industry and the media was repeating this as fact every day in their articles and broadcasts terrifying the shit out of people about AIDS and giving the impression that a positive test for HIV (see 'Covid') was a death sentence. Duesberg was a threat to the AIDS gravy train and the agenda that underpinned it. He was therefore abused and castigated after he told the Proceedings of the National Academy of Sciences

there was no good evidence implicating the new 'virus'. Editors rejected his manuscripts and his research funds were deleted. Mullis points out that the CDC has defined AIDS as one of more than 30 diseases *if accompanied* by a positive result on a test that detects antibodies to HIV; but those same diseases are not defined as AIDS cases when antibodies are not detected:

> If an HIV-positive woman develops uterine cancer, for example, she is considered to have AIDS. If she is not HIV positive, she simply has uterine cancer. An HIV-positive man with tuberculosis has AIDS; if he tests negative he simply has tuberculosis. If he lives in Kenya or Colombia, where the test for HIV antibodies is too expensive, he is simply presumed to have the antibodies and therefore AIDS, and therefore he can be treated in the World Health Organization's clinic. It's the only medical help available in some places. And it's free, because the countries that support WHO are worried about AIDS.

Mullis accuses the CDC of continually adding new diseases (see ever more 'Covid symptoms') to the grand AIDS definition and of virtually doctoring the books to make it appear as if the disease continued to spread. He cites how in 1993 the CDC enormously broadened its AIDS definition and county health authorities were delighted because they received $2,500 per year from the Federal government for every reported AIDS case. Ladies and gentlemen, I have just described, via Kary Mullis, the 'Covid pandemic' of 2020 and beyond. Every element is the same and it's been pulled off in the same way by the same networks.

The 'Covid virus' exists? Okay – prove it. Er … still waiting

What Kary Mullis described with regard to 'HIV' has been repeated with 'Covid'. A claim is made that a new, or 'novel', infection has been found and the entire medical system of the world repeats that as fact exactly as they did with HIV and AIDS. No one in the mainstream asks rather relevant questions such as 'How do you know?' and 'Where is your proof?' The SARS-Cov-2 'virus' and the 'Covid-19 disease' became an overnight 'everybody-knows-that'. The origin could be debated and mulled over, but what you could not suggest was that 'SARS-Cov-2' didn't exist. That would be

ridiculous. 'Everybody knows' the 'virus' exists. Well, I didn't for one along with American proper doctors like Andrew Kaufman and Tom Cowan and long-time American proper journalist Jon Rappaport. We dared to pursue the obvious and simple question: 'Where's the evidence?' The overwhelming majority in medicine, journalism and the general public did not think to ask that. After all, *everyone knew* there was a new 'virus'. Everyone was saying so and I heard it on the BBC. Some would eventually argue that the 'deadly virus' was nothing like as deadly as claimed, but few would venture into the realms of its very existence. Had they done so they would have found that the evidence for that claim had gone AWOL as with HIV causes AIDS. In fact, not even that. For something to go AWOL it has to exist in the first place and scientific proof for a 'SARS-Cov-2' can be filed under nothing, nowhere and zilch.

Dr Andrew Kaufman is a board-certified forensic psychiatrist in New York State, a Doctor of Medicine and former Assistant Professor and Medical Director of Psychiatry at SUNY Upstate Medical University, and Medical Instructor of Hematology and Oncology at the Medical School of South Carolina. He also studied biology at the Massachusetts Institute of Technology (MIT) and trained in Psychiatry at Duke University. Kaufman is retired from allopathic medicine, but remains a consultant and educator on natural healing, I saw a video of his very early on in the 'Covid' hoax in which he questioned claims about the 'virus' in the absence of any supporting evidence and with plenty pointing the other way. I did everything I could to circulate his work which I felt was asking the pivotal questions that needed an answer. I can recommend an excellent pull-together interview he did with the website The Last Vagabond entitled *Dr Andrew Kaufman: Virus Isolation, Terrain Theory and Covid-19* and his website is andrewkaufmanmd.com. Kaufman is not only a forensic psychiatrist; he is forensic in all that he does. He always reads original scientific papers, experiments and studies instead of second-third-fourth-hand reports about the 'virus' in the media which are repeating the repeated repetition of the narrative. When he did so with the original Chinese 'virus' papers Kaufman

realised that there was no evidence of a 'SARS-Cov-2'. They had never – from the start – shown it to exist and every repeat of this claim worldwide was based on the accepted existence of proof that was nowhere to be found – see Kary Mullis and HIV. Here we go again.

Let's postulate

Kaufman discovered that the Chinese authorities immediately concluded that the cause of an illness that broke out among about 200 initial patients in Wuhan was a 'new virus' when there were no grounds to make that conclusion. The alleged 'virus' was not isolated from other genetic material in their samples and then shown through a system known as Koch's postulates to be the causative agent of the illness. The world was told that the SARS-Cov-2 'virus' caused a disease they called 'Covid-19' which had 'flu-like' symptoms and could lead to respiratory problems and pneumonia. If it wasn't so tragic it would almost be funny. *'Flu-like' symptoms'? Pneumonia? Respiratory disease?* What in *CHINA* and particularly in *Wuhan*, one of the most polluted cities in the world with a resulting epidemic of respiratory disease?? Three hundred thousand people get pneumonia in China every year and there are nearly a billion cases worldwide of 'flu-like symptoms'. These have a whole range of causes – including pollution in Wuhan – but no other possibility was credibly considered in late 2019 when the world was told there was a new and deadly 'virus'. The global prevalence of pneumonia and 'flu-like systems' gave the Cult networks unlimited potential to re-diagnose these other causes as the mythical 'Covid-19' and that is what they did from the very start. Kaufman revealed how Chinese medical and science authorities (all subordinates to the Cult-owned communist government) took genetic material from the lungs of only a few of the first patients. The material contained their own cells, bacteria, fungi and other microorganisms living in their bodies. The only way you could prove the existence of the 'virus' and its responsibility for the alleged 'Covid-19' was to isolate the virus from all the other material – a process also known as 'purification' – and

then follow the postulates sequence developed in the late 19th century by German physician and bacteriologist Robert Koch which became the 'gold standard' for connecting an alleged causation agent to a disease:

1. The microorganism (bacteria, fungus, virus, etc.) must be present in every case of the disease and all patients must have the same symptoms. It must also *not be present in healthy individuals*.

2. The microorganism must be isolated from the host with the disease. If the microorganism is a bacteria or fungus it must be grown in a pure culture. If it is a virus, it must be purified (i.e. containing no other material except the virus particles) from a clinical sample.

3. The specific disease, with all of its characteristics, must be reproduced when the infectious agent (the purified virus or a pure culture of bacteria or fungi) is inoculated into a healthy, susceptible host.

4. The microorganism must be recoverable from the experimentally infected host as in step 2.

Not one of these criteria has been met in the case of 'SARS-Cov-2' and 'Covid-19'. Not ONE. *EVER*. Robert Koch refers to bacteria and not viruses. What are called 'viral particles' are so minute (hence masks are useless by any definition) that they could only be seen after the invention of the electron microscope in the 1930s and can still only be observed through that means. American bacteriologist and virologist Thomas Milton Rivers, the so-called 'Father of Modern Virology' who was very significantly director of the Rockefeller Institute for Medical Research in the 1930s, developed a less stringent version of Koch's postulates to identify 'virus' causation known as 'Rivers criteria'. 'Covid' did not pass that process either. Some even doubt whether any 'virus' can be isolated from other particles containing genetic material in the Koch method. Freedom of Information requests in many countries asking for scientific proof that the 'Covid virus' has been purified and isolated and shown to exist have all come back with a 'we don't have that' and when this happened with a request to the UK Department of Health they added this comment:

However, outside of the scope of the [Freedom of Information Act] and on a discretionary basis, the following information has been advised to us, which may be of interest. Most infectious diseases are caused by viruses, bacteria or fungi. Some bacteria or fungi have the capacity to grow on their own in isolation, for example in colonies on a petri dish. Viruses are different in that they are what we call 'obligate pathogens' – that is, they cannot survive or reproduce without infecting a host ...

… For some diseases, it is possible to establish causation between a microorganism and a disease by isolating the pathogen from a patient, growing it in pure culture and reintroducing it to a healthy organism. These are known as 'Koch's postulates' and were developed in 1882. However, as our understanding of disease and different disease-causing agents has advanced, these are no longer the method for determining causation [Andrew Kaufman asks why in that case are there two published articles falsely claiming to satisfy Koch's postulates].

It has long been known that viral diseases cannot be identified in this way as viruses cannot be grown in 'pure culture'. When a patient is tested for a viral illness, this is normally done by looking for the presence of antigens, or viral genetic code in a host with molecular biology techniques [Kaufman asks how you could know the origin of these chemicals without having a pure culture for comparison].

For the record 'antigens' are defined so:

Invading microorganisms have antigens on their surface that the human body can recognise as being foreign – meaning not belonging to it. When the body recognises a foreign antigen, lymphocytes (white blood cells) produce antibodies, which are complementary in shape to the antigen.

Notwithstanding that this is open to question in relation to 'SARS-Cov-2' the presence of 'antibodies' can have many causes and they are found in people that are perfectly well. Kary Mullis said: 'Antibodies … had always been considered evidence of past disease, not present disease.'

'Covid' really is a *computer* 'virus'

Where the UK Department of Health statement says 'viruses' are now 'diagnosed' through a 'viral genetic code in a host with molecular biology techniques', they mean … *the PCR test* which its inventor said cannot test for infectious disease. They have no credible method of connecting a 'virus' to a disease and we will see that there is no scientific proof that any 'virus' causes any disease or there is any such thing as a 'virus' in the way that it is described. Tenacious Canadian researcher Christine Massey and her team made

some 40 Freedom of Information requests to national public health agencies in different countries asking for proof that SARS-CoV-2 has been isolated and not one of them could supply that information. Massey said of her request in Canada: 'Freedom of Information reveals Public Health Agency of Canada has no record of 'SARS-COV-2' isolation performed by anyone, anywhere, ever.' If you accept the comment from the UK Department of Health it's because they can't isolate a 'virus'. Even so many 'science' papers claimed to have isolated the 'Covid virus' until they were questioned and had to admit they hadn't. A reply from the Robert Koch Institute in Germany was typical: 'I am not aware of a paper which purified isolated SARS-CoV-2.' So what the hell was Christian Drosten and his gang using to design the 'Covid' testing protocol that has produced all the illusory Covid' cases and 'Covid' deaths when the head of the Chinese version of the CDC admitted there was a problem right from the start in that the 'virus' had never been isolated/purified? Breathe deeply: What they are calling 'Covid' is actually created by a *computer program* i.e. *they made it up* – er, that's it. They took lung fluid, with many sources of genetic material, from one single person alleged to be infected with Covid-19 by a PCR test which they *claimed*, without clear evidence, contained a 'virus'. They used several computer programs to create a model of a theoretical virus genome sequence from more than fifty-six million small sequences of RNA, each of an unknown source, assembling them like a puzzle with no known solution. The computer filled in the gaps with sequences from bits in the gene bank to make it look like a bat SARS-like coronavirus! A wave of the magic wand and poof, an in silico (computer-generated) genome, a scientific fantasy, was created. UK health researcher Dr Kevin Corbett made the same point with this analogy:

> … It's like giving you a few bones and saying that's your fish. It could be any fish. Not even a skeleton. Here's a few fragments of bones. That's your fish … It's all from gene bank and the bits of the virus sequence that weren't there they made up.
>
> They synthetically created them to fill in the blanks. That's what genetics is; it's a code. So it's ABBBCCDDD and you're missing some what you think is EEE so you put it in. It's all

synthetic. You just manufacture the bits that are missing. This is the end result of the geneticization of virology. This is basically a computer virus.

Further confirmation came in an email exchange between British citizen journalist Frances Leader and the government's Medicines & Healthcare Products Regulatory Agency (the Gates-funded MHRA) which gave emergency permission for untested 'Covid vaccines' to be used. The agency admitted that the 'vaccine' is not based on an isolated 'virus', but comes from a *computer-generated model*. Frances Leader was naturally banned from Cult-owned fascist Twitter for making this exchange public. The process of creating computer-generated alleged 'viruses' is called 'in silico' or 'in silicon' – computer chips – and the term 'in silico' is believed to originate with biological experiments using only a computer in 1989. 'Vaccines' involved with 'Covid' are also produced 'in silico' or by computer not a natural process. If the original 'virus' is nothing more than a made-up computer model how can there be 'new variants' of something that never existed in the first place? They are not new 'variants'; they are new *computer models* only minutely different to the original program and designed to further terrify the population into having the 'vaccine' and submitting to fascism. You want a 'new variant'? Click, click, enter – there you go. Tell the medical profession that you have discovered a 'South African variant', 'UK variants' or a 'Brazilian variant' and in the usual HIV-causes-AIDS manner they will unquestioningly repeat it with no evidence whatsoever to support these claims. They will go on television and warn about the dangers of 'new variants' while doing nothing more than repeating what they have been told to be true and knowing that any deviation from that would be career suicide. Big-time insiders will know it's a hoax, but much of the medical community is clueless about the way they are being played and themselves play the public without even being aware they are doing so. What an interesting 'coincidence' that AstraZeneca and Oxford University were conducting 'Covid vaccine trials' in the three countries – the UK, South Africa and Brazil – where the first three 'variants' were claimed to have 'broken out'.

Here's your 'virus' – it's a unicorn

Dr Andrew Kaufman presented a brilliant analysis describing how the 'virus' was imagined into fake existence when he dissected an article published by *Nature* and written by 19 authors detailing *alleged* 'sequencing of a complete viral genome' of the 'new SARS-CoV-2 virus'. This computer-modelled *in silico* genome was used as a template for all subsequent genome sequencing experiments that resulted in the so-called variants which he said now number more than *6,000*. The fake genome was constructed from more than 56 million individual short strands of RNA. Those little pieces were assembled into longer pieces by finding areas of overlapping sequences. The computer programs created over two million possible combinations from which the authors simply chose the longest one. They then compared this to a 'bat virus' and the computer 'alignment' rearranged the sequence and filled in the gaps! They called this computer-generated abomination the 'complete genome'. Dr Tom Cowan, a fellow medical author and collaborator with Kaufman, said such computer-generation constitutes scientific fraud and he makes this superb analogy:

> Here is an equivalency: A group of researchers claim to have found a unicorn because they found a piece of a hoof, a hair from a tail, and a snippet of a horn. They then add that information into a computer and program it to re-create the unicorn, and they then claim this computer re-creation is the real unicorn. Of course, they had never actually seen a unicorn so could not possibly have examined its genetic makeup to compare their samples with the actual unicorn's hair, hooves and horn.
>
> The researchers claim they decided which is the real genome of SARS-CoV-2 by 'consensus', sort of like a vote. Again, different computer programs will come up with different versions of the imaginary 'unicorn', so they come together as a group and decide which is the real imaginary unicorn.

This is how the 'virus' that has transformed the world was brought into fraudulent 'existence'. Extraordinary, yes, but as the Nazis said the bigger the lie the more will believe it. Cowan, however, wasn't finished and he went on to identify what he called the real blockbuster in the paper. He quotes this section from a paper written

by virologists and published by the CDC and then explains what it means:

Therefore, we examined the capacity of SARS-CoV-2 to infect and replicate in several common primate and human cell lines, including human adenocarcinoma cells (A549), human liver cells (HUH 7.0), and human embryonic kidney cells (HEK-293T). In addition to Vero E6 and Vero CCL81 cells. ... Each cell line was inoculated at high multiplicity of infection and examined 24h post-infection.

No CPE was observed in any of the cell lines except in Vero cells, which grew to greater than 10 to the 7th power at 24 h post-infection. In contrast, HUH 7.0 and 293T showed only modest viral replication, and A549 cells were incompatible with SARS CoV-2 infection.

Cowan explains that when virologists attempt to prove infection they have three possible 'hosts' or models on which they can test. The first was humans. Exposure to humans was generally not done for ethical reasons and has never been done with SARS-CoV-2 or any coronavirus. The second possible host was animals. Cowan said that forgetting for a moment that they never actually use purified virus when exposing animals they do use solutions that they *claim* contain the virus. Exposure to animals has been done with SARS-CoV-2 in an experiment involving mice and this is what they found: *None of the wild (normal) mice got sick*. In a group of genetically-modified mice, a statistically insignificant number lost weight and had slightly bristled fur, but they experienced nothing like the illness called 'Covid-19'. Cowan said the third method – the one they mostly rely on – is to inoculate solutions they *say* contain the virus onto a variety of tissue cultures. This process had never been shown to kill tissue *unless* the sample material was starved of nutrients and poisoned as *part of the process*. Yes, incredibly, in tissue experiments designed to show the 'virus' is responsible for killing the tissue they starve the tissue of nutrients and add toxic drugs including antibiotics and they do not have control studies to see if it's the starvation and poisoning that is degrading the tissue rather than the 'virus' they allege to be in there somewhere. You want me to pinch you? Yep, I understand. Tom Cowan said this about the whole nonsensical farce as he explains what that quote from the CDC paper really means:

The shocking thing about the above quote is that using their own methods, the virologists found that solutions containing SARS-CoV-2 – even in high amounts – were NOT, I repeat NOT, infective to any of the three human tissue cultures they tested. In plain English, this means they proved, on their terms, that this 'new coronavirus' is not infectious to human beings. It is ONLY infective to monkey kidney cells, and only then when you add two potent drugs (gentamicin and amphotericin), known to be toxic to kidneys, to the mix.

My friends, read this again and again. These virologists, published by the CDC, performed a clear proof, on their terms, showing that the SARS-CoV-2 virus is harmless to human beings. That is the only possible conclusion, but, unfortunately, this result is not even mentioned in their conclusion. They simply say they can provide virus stocks cultured only on monkey Vero cells, thanks for coming.

Cowan concluded: 'If people really understood how this "science" was done, I would hope they would storm the gates and demand honesty, transparency and truth.' Dr Michael Yeadon, former Vice President and Chief Scientific Adviser at drug giant Pfizer has been a vocal critic of the 'Covid vaccine' and its potential for multiple harm. He said in an interview in April, 2021, that 'not one [vaccine] has the virus. He was asked why vaccines normally using a 'dead' version of a disease to activate the immune system were not used for 'Covid' and instead we had the synthetic methods of the 'mRNA Covid vaccine'. Yeadon said that to do the former 'you'd have to have some of [the virus] wouldn't you?' He added: 'No-one's got any – seriously.' Yeadon said that surely they couldn't have fooled the whole world for a year without having a virus, 'but oddly enough ask around – no one's got it'. He didn't know why with all the 'great labs' around the world that the virus had not been isolated – 'Maybe they've been too busy running bad PCR tests and vaccines that people don't need.' What is today called 'science' is not 'science' at all. Science is no longer what is, but whatever people can be manipulated to *believe* that it is. Real science has been hijacked by the Cult to dispense and produce the 'expert scientists' and contentions that suit the agenda of the Cult. How big-time this has happened with the 'Covid' hoax which is entirely based on fake science delivered by fake 'scientists' and fake 'doctors'. The human-caused climate change hoax is also entirely based on fake science delivered by fake 'scientists' and fake 'climate experts'. In both cases real

scientists, climate experts and doctors have their views suppressed and deleted by the Cult-owned science establishment, media and Silicon Valley. This is the 'science' that politicians claim to be 'following' and a common denominator of 'Covid' and climate are Cult psychopaths Bill Gates and his mate Klaus Schwab at the Gates-funded World Economic Forum. But, don't worry, it's all just a coincidence and absolutely nothing to worry about. *Zzzzzzzz*.

What is a 'virus' REALLY?

Dr Tom Cowan is one of many contesting the very existence of viruses let alone that they cause disease. This is understandable when there is no scientific evidence for a disease-causing 'virus'. German virologist Dr Stefan Lanka won a landmark case in 2017 in the German Supreme Court over his contention that there is no such thing as a measles virus. He had offered a big prize for anyone who could prove there is and Lanka won his case when someone sought to claim the money. There is currently a prize of more than 225,000 euros on offer from an Isolate Truth Fund for anyone who can prove the isolation of SARS-CoV-2 and its genetic substance. Lanka wrote in an article headed 'The Misconception Called Virus' that scientists think a 'virus' is causing tissue to become diseased and degraded when in fact it is the *processes they are using* which do that – not a 'virus'. Lanka has done an important job in making this point clear as Cowan did in his analysis of the CDC paper. Lanka says that all claims about viruses as disease-causing pathogens are wrong and based on 'easily recognisable, understandable and verifiable misinterpretations.' Scientists believed they were working with 'viruses' in their laboratories when they were really working with 'typical particles of specific dying tissues or cells …' Lanka said that the tissue decaying process claimed to be caused by a 'virus' still happens when no alleged 'virus' is involved. It's the *process* that does the damage and not a 'virus'. The genetic sample is deprived of nutrients, removed from its energy supply through removal from the body and then doused in toxic antibiotics to remove any bacteria. He confirms again that establishment scientists do not (pinch me)

conduct control experiments to see if this is the case and if they did they would see the claims that 'viruses' are doing the damage is nonsense. He adds that during the measles 'virus' court case he commissioned an independent laboratory to perform just such a control experiment and the result was that the tissues and cells died in the exact same way as with alleged 'infected' material. This is supported by a gathering number of scientists, doctors and researchers who reject what is called 'germ theory' or the belief in the body being infected by contagious sources emitted by other people. Researchers Dawn Lester and David Parker take the same stance in their highly-detailed and sourced book *What Really Makes You Ill – Why everything you thought you knew about disease is wrong* which was recommended to me by a number of medical professionals genuinely seeking the truth. Lester and Parker say there is no provable scientific evidence to show that a 'virus' can be transmitted between people or people and animals or animals and people:

> The definition also claims that viruses are the cause of many diseases, as if this has been definitively proven. But this is not the case; there is no original scientific evidence that definitively demonstrates that any virus is the cause of any disease. The burden of proof for any theory lies with those who proposed it; but none of the existing documents provides 'proof' that supports the claim that 'viruses' are pathogens.

Dr Tom Cowan employs one of his clever analogies to describe the process by which a 'virus' is named as the culprit for a disease when what is called a 'virus' is only material released by cells detoxing themselves from infiltration by chemical or radiation poisoning. The tidal wave of technologically-generated radiation in the 'smart' modern world plus all the toxic food and drink are causing this to happen more than ever. Deluded 'scientists' misread this as a gathering impact of what they wrongly label 'viruses'.

Paper can infect houses

Cowan said in an article for davidicke.com – with his tongue only mildly in his cheek – that he believed he had made a tremendous

discovery that may revolutionise science. He had discovered that small bits of paper are alive, 'well alive-ish', can 'infect' houses, and then reproduce themselves inside the house. The result was that this explosion of growth in the paper inside the house causes the house to explode, blowing it to smithereens. His evidence for this new theory is that in the past months he had carefully examined many of the houses in his neighbourhood and found almost no scraps of paper on the lawns and surrounds of the house. There was an occasional stray label, but nothing more. Then he would return to these same houses a week or so later and with a few, not all of them, particularly the old and decrepit ones, he found to his shock and surprise they were littered with stray bits of paper. He knew then that the paper had infected these houses, made copies of itself, and blew up the house. A young boy on a bicycle at one of the sites told him he had seen a demolition crew using dynamite to explode the house the previous week, but Cowan dismissed this as the idle thoughts of silly boys because 'I was on to something big'. He was on to how 'scientists' mistake genetic material in the detoxifying process for something they call a 'virus'. Cowan said of his house and paper story:

> If this sounds crazy to you, it's because it should. This scenario is obviously nuts. But consider this admittedly embellished, for effect, current viral theory that all scientists, medical doctors and virologists currently believe.

He takes the example of the 'novel SARS-Cov2' virus to prove the point. First they take someone with an undefined illness called 'Covid-19' and don't even attempt to find any virus in their sputum. Never mind the scientists still describe how this 'virus', which they have not located attaches to a cell receptor, injects its genetic material, in 'Covid's' case, RNA, into the cell. The RNA once inserted exploits the cell to reproduce itself and makes 'thousands, nay millions, of copies of itself … Then it emerges victorious to claim its next victim':

If you were to look in the scientific literature for proof, actual scientific proof, that uniform SARS-CoV2 viruses have been properly isolated from the sputum of a sick person, that actual spike proteins could be seen protruding from the virus (which has not been found), you would find that such evidence doesn't exist.

If you go looking in the published scientific literature for actual pictures, proof, that these spike proteins or any viral proteins are ever attached to any receptor embedded in any cell membrane, you would also find that no such evidence exists. If you were to look for a video or documented evidence of the intact virus injecting its genetic material into the body of the cell, reproducing itself and then emerging victorious by budding off the cell membrane, you would find that no such evidence exists.

The closest thing you would find is electron micrograph pictures of cellular particles, possibly attached to cell debris, both of which to be seen were stained by heavy metals, a process that completely distorts their architecture within the living organism. This is like finding bits of paper stuck to the blown-up bricks, thereby proving the paper emerged by taking pieces of the bricks on its way out.

The Enders baloney

Cowan describes the 'Covid' story as being just as make-believe as his paper story and he charts back this fantasy to a Nobel Prize winner called John Enders (1897-1985), an American biomedical scientist who has been dubbed 'The Father of Modern Vaccines'. Enders is claimed to have 'discovered' the process of the viral culture which 'proved' that a 'virus' caused measles. Cowan explains how Enders did this 'by using the EXACT same procedure that has been followed by every virologist to find and characterize every new virus since 1954'. Enders took throat swabs from children with measles and immersed them in 2ml of milk. Penicillin (100u/ml) and the antibiotic streptomycin (50,g/ml) were added and the whole mix was centrifuged – rotated at high speed to separate large cellular debris from small particles and molecules as with milk and cream, for example. Cowan says that if the aim is to find little particles of genetic material ('viruses') in the snot from children with measles it would seem that the last thing you would do is mix the snot with other material – milk –that also has genetic material. 'How are you ever going to know whether whatever you found came from the snot or the milk?' He points out that streptomycin is a 'nephrotoxic' or poisonous-to-the-kidney drug. You will see the relevance of that

shortly. Cowan says that it gets worse, much worse, when Enders describes the culture medium upon which the virus 'grows': 'The culture medium consisted of bovine amniotic fluid (90%), beef embryo extract (5%), horse serum (5%), antibiotics and phenol red as an indicator of cell metabolism.' Cowan asks incredulously: 'Did he just say that the culture medium also contained fluids and tissues that are themselves rich sources of genetic material?' The genetic cocktail, or 'medium', is inoculated onto tissue and cells from rhesus monkey *kidney* tissue. This is where the importance of streptomycin comes in and currently-used antimicrobials and other drugs that are *poisonous to kidneys* and used in ALL modern viral cultures (e.g. gentamicin, streptomycin, and amphotericin). Cowan asks: 'How are you ever going to know from this witch's brew where any genetic material comes from as we now have five different sources of rich genetic material in our mix?' Remember, he says, that all genetic material, whether from monkey kidney tissues, bovine serum, milk, etc., is made from the exact same components. The same central question returns: 'How are you possibly going to know that it was the virus that killed the kidney tissue and not the toxic antibiotic and starvation rations on which you are growing the tissue?' John Enders answered the question himself – *you can't*:

A second agent was obtained from an uninoculated culture of monkey kidney cells. The cytopathic changes [death of the cells] it induced in the unstained preparations could not be distinguished with confidence from the viruses isolated from measles.

The death of the cells ('cytopathic changes') happened in exactly the same manner, whether they inoculated the kidney tissue with the measles snot or not, Cowan says. 'This is evidence that the destruction of the tissue, the very proof of viral causation of illness, was not caused by anything in the snot because they saw the same destructive effect when the snot was not even used … the cytopathic, i.e., cell-killing, changes come from the process of the culture itself, not from any virus in any snot, period.' Enders quotes in his 1957 paper a virologist called Ruckle as reporting similar findings 'and in addition has isolated an agent from monkey kidney tissue that is so

far indistinguishable from human measles virus'. In other words, Cowan says, these particles called 'measles viruses' are simply and clearly breakdown products of the starved and poisoned tissue. For measles 'virus' see all 'viruses' including the so-called 'Covid virus'. Enders, the 'Father of Modern Vaccines', also said:

There is a potential risk in employing cultures of primate cells for the production of vaccines composed of attenuated virus, since the presence of other agents possibly latent in primate tissues cannot be definitely excluded by any known method.

Cowan further quotes from a paper published in the journal *Viruses* in May, 2020, while the 'Covid pandemic' was well underway in the media if not in reality. 'EVs' here refers to particles of genetic debris from our own tissues, such as exosomes of which more in a moment: 'The remarkable resemblance between EVs and viruses has caused quite a few problems in the studies focused on the analysis of EVs released during viral infections.' Later the paper adds that to date a reliable method that can actually guarantee a complete separation (of EVs from viruses) DOES NOT EXIST. This was published at a time when a fairy tale 'virus' was claimed in total certainty to be causing a fairy tale 'viral disease' called 'Covid-19' – a fairy tale that was already well on the way to transforming human society in the image that the Cult has worked to achieve for so long. Cowan concludes his article:

To summarize, there is no scientific evidence that pathogenic viruses exist. What we think of as 'viruses' are simply the normal breakdown products of dead and dying tissues and cells. When we are well, we make fewer of these particles; when we are starved, poisoned, suffocated by wearing masks, or afraid, we make more.

There is no engineered virus circulating and making people sick. People in laboratories all over the world are making genetically modified products to make people sick. These are called vaccines. There is no virome, no 'ecosystem' of viruses, viruses are not 8%, 50% or 100 % of our genetic material. These are all simply erroneous ideas based on the misconception called a virus.

What is 'Covid'? Load of bollocks

The background described here by Cowan and Lanka was emphasised in the first video presentation that I saw by Dr Andrew Kaufman when he asked whether the 'Covid virus' was in truth a natural defence mechanism of the body called 'exosomes'. These are released by cells when in states of toxicity – see the same themes returning over and over. They are released ever more profusely as chemical and radiation toxicity increases and think of the potential effect therefore of 5G alone as its destructive frequencies infest the human energetic information field with a gathering pace (5G went online in Wuhan in 2019 as the 'virus' emerged). I'll have more about this later. Exosomes transmit a warning to the rest of the body that 'Houston, we have a problem'. Kaufman presented images of exosomes and compared them with 'Covid' under an electron microscope and the similarity was remarkable. They both attach to the same cell receptors (*claimed* in the case of 'Covid'), contain the same genetic material in the form of RNA or ribonucleic acid, and both are found in 'viral cell cultures' with damaged or dying cells. James Hildreth MD, President and Chief Executive Officer of the Meharry Medical College at Johns Hopkins, said: 'The virus is fully an exosome in every sense of the word.' Kaufman's conclusion was that there is no 'virus': 'This entire pandemic is a completely manufactured crisis … there is no evidence of anyone dying from [this] illness.' Dr Tom Cowan and Sally Fallon Morell, authors of *The Contagion Myth*, published a statement with Dr Kaufman in February, 2021, explaining why the 'virus' does not exist and you can read it that in full in the Appendix.

'Virus' theory can be traced to the 'cell theory' in 1858 of German physician Rudolf Virchow (1821-1920) who contended that disease originates from a single cell infiltrated by a 'virus'. Dr Stefan Lanka said that findings and insights with respect to the structure, function and central importance of tissues in the creation of life, which were already known in 1858, comprehensively refute the cell theory. Virchow ignored them. We have seen the part later played by John Enders in the 1950s and Lanka notes that infection theories were only established as a global dogma through the policies and

eugenics of the Third Reich in Nazi Germany (creation of the same Sabbatian cult behind the 'Covid' hoax). Lanka said: 'Before 1933, scientists dared to contradict this theory; after 1933, these critical scientists were silenced'. Dr Tom Cowan's view is that ill-heath is caused by too much of something, too little of something, or toxification from chemicals and radiation – not contagion. We must also highlight as a major source of the 'virus' theology a man still called the 'Father of Modern Virology' – Thomas Milton Rivers (1888-1962). There is no way given the Cult's long game policy that it was a coincidence for the 'Father of Modern Virology' to be director of the Rockefeller Institute for Medical Research from 1937 to 1956 when he is credited with making the Rockefeller Institute a leader in 'viral research'. Cult Rockefellers were the force behind the creation of Big Pharma 'medicine', established the World Health Organisation in 1948, and have long and close associations with the Gates family that now runs the WHO during the pandemic hoax through mega-rich Cult gofer and psychopath Bill Gates.

Only a Renegade Mind can see through all this bullshit by asking the questions that need to be answered, not taking 'no' or prevarication for an answer, and certainly not hiding from the truth in fear of speaking it. Renegade Minds have always changed the world for the better and they will change this one no matter how bleak it may currently appear to be.

CHAPTER SIX

Sequence of deceit

If you tell the truth, you don't have to remember anything
Mark Twain

Against the background that I have laid out this far the sequence that took us from an invented 'virus' in Cult-owned China in late 2019 to the fascist transformation of human society can be seen and understood in a whole new context.

We were told that a deadly disease had broken out in Wuhan and the world media began its campaign (coordinated by behavioural psychologists as we shall see) to terrify the population into unquestioning compliance. We were shown images of Chinese people collapsing in the street which never happened in the West with what was supposed to be the same condition. In the earliest days when alleged cases and deaths were few the fear register was hysterical in many areas of the media and this would expand into the common media narrative across the world. The real story was rather different, but we were never told that. The Chinese government, one of the Cult's biggest centres of global operation, said they had discovered a new illness with flu-like and pneumonia-type symptoms in a city with such toxic air that it is overwhelmed with flu-like symptoms, pneumonia and respiratory disease. Chinese scientists said it was a new – 'novel' – coronavirus which they called Sars-Cov-2 and that it caused a disease they labelled 'Covid-19'. There was no evidence for this and the 'virus' has never to this day been isolated, purified and its genetic code established from that. It

was from the beginning a computer-generated fiction. Stories of Chinese whistleblowers saying the number of deaths was being supressed or that the 'new disease' was related to the Wuhan bio-lab misdirected mainstream and alternative media into cul-de-sacs to obscure the real truth – there was no 'virus'.

Chinese scientists took genetic material from the lung fluid of just a few people and said they had found a 'new' disease when this material had a wide range of content. There was no evidence for a 'virus' for the very reasons explained in the last two chapters. The 'virus' has never been shown to (a) exist and (b) cause any disease. People were diagnosed on symptoms that are so widespread in Wuhan and polluted China and with a PCR test that can't detect infectious disease. On this farce the whole global scam was sold to the rest of the world which would also diagnose respiratory disease as 'Covid-19' from symptoms alone or with a PCR test not testing for a 'virus'. Flu miraculously disappeared *worldwide* in 2020 and into 2021 as it was redesignated 'Covid-19'. It was really the same old flu with its 'flu-like' symptoms attributed to 'flu-like' 'Covid-19'. At the same time with very few exceptions the Chinese response of draconian lockdown and fascism was the chosen weapon to respond across the West as recommended by the Cult-owned Tedros at the Cult-owned World Health Organization run by the Cult-owned Gates. All was going according to plan. Chinese scientists – everything in China is controlled by the Cult-owned government – compared their contaminated RNA lung-fluid material with other RNA sequences and said it appeared to be just under 80 percent identical to the SARS-CoV-1 'virus' claimed to be the cause of the SARS (severe acute respiratory syndrome) 'outbreak' in 2003. They decreed that because of this the 'new virus' had to be related and they called it SARS-CoV-2. There are some serious problems with this assumption and *assumption* was all it was. Most 'factual' science turns out to be assumptions repeated into everyone-knows-that. A match of under 80-percent is meaningless. Dr Kaufman makes the point that there's a *96 percent* genetic correlation between humans and chimpanzees, but 'no one would say our genetic material is part

of the chimpanzee family'. Yet the Chinese authorities were claiming that a much lower percentage, less than 80 percent, proved the existence of a new 'coronavirus'. For goodness sake human DNA is 60 percent similar to a *banana*.

You are feeling sleepy

The entire 'Covid' hoax is a global Psyop, a psychological operation to program the human mind into believing and fearing a complete fantasy. A crucial aspect of this was what *appeared* to happen in Italy. It was all very well streaming out daily images of an alleged catastrophe in Wuhan, but to the Western mind it was still on the other side of the world in a very different culture and setting. A reaction of 'this could happen to me and my family' was still nothing like as intense enough for the mind-doctors. The Cult needed a Western example to push people over that edge and it chose Italy, one of its major global locations going back to the Roman Empire. An Italian 'Covid' crisis was manufactured in a particular area called Lombardy which just happens to be notorious for its toxic air and therefore respiratory disease. Wuhan, China, déjà vu. An hysterical media told horror stories of Italians dying from 'Covid' in their droves and how Lombardy hospitals were being overrun by a tidal wave of desperately ill people needing treatment after being struck down by the 'deadly virus'. Here was the psychological turning point the Cult had planned. Wow, if this is happening in Italy, the Western mind concluded, this indeed could happen to me and my family. Another point is that Italian authorities responded by following the Chinese blueprint so vehemently recommended by the Cult-owned World Health Organization. They imposed fascistic lockdowns on the whole country viciously policed with the help of surveillance drones sweeping through the streets seeking out anyone who escaped from mass house arrest. Livelihoods were destroyed and psychology unravelled in the way we have witnessed since in all lockdown countries. Crucial to the plan was that Italy responded in this way to set the precedent of suspending freedom and imposing fascism in a 'Western liberal democracy'. I emphasised in an

animated video explanation on davidicke.com posted in the summer of 2020 how important it was to the Cult to expand the Chinese lockdown model across the West. Without this, and the bare-faced lie that non-symptomatic people could still transmit a 'disease' they didn't have, there was no way locking down the whole population, sick and not sick, could be pulled off. At just the right time and with no evidence Cult operatives and gofers claimed that people without symptoms could pass on the 'disease'. In the name of protecting the 'vulnerable' like elderly people, who lockdowns would kill by the tens of thousands, we had for the first time healthy people told to isolate as well as the sick. The great majority of people who tested positive had no symptoms because there was nothing wrong with them. It was just a trick made possible by a test not testing for the 'virus'.

Months after my animated video the Gates-funded Professor Neil Ferguson at the Gates-funded Imperial College confirmed that I was right. He didn't say it in those terms, naturally, but he did say it. Ferguson will enter the story shortly for his outrageously crazy 'computer models' that led to Britain, the United States and many other countries following the Chinese and now Italian methods of response. Put another way, following the Cult script. Ferguson said that SAGE, the UK government's scientific advisory group which has controlled 'Covid' policy from the start, wanted to follow the Chinese lockdown model (while they all continued to work and be paid), but they wondered if they could possibly, in Ferguson's words, 'get away with it in Europe'. 'Get away with it'? Who the hell do these moronic, arrogant people think they are? This appalling man Ferguson said that once Italy went into national lockdown they realised they, too, could mimic China:

> It's a communist one-party state, we said. We couldn't get away with it in Europe, we thought … and then Italy did it. And we realised we could. Behind this garbage from Ferguson is a simple fact: Doing the same as China in every country was the plan from the start and Ferguson's 'models' would play a central role in achieving that. It's just a coincidence, of course, and absolutely nothing to worry your little head about.

Oops, sorry, our mistake

Once the Italian segment of the Psyop had done the job it was designed to do a very different story emerged. Italian authorities revealed that 99 percent of those who had 'died from Covid-19' in Italy had one, two, three, or more 'co-morbidities' or illnesses and health problems that could have ended their life. The US Centers for Disease Control and Prevention (CDC) published a figure of 94 percent for Americans dying of 'Covid' while having other serious medical conditions – on average two to three (some five or six) other potential causes of death. In terms of death from an unproven 'virus' I say it is 100 percent. The other one percent in Italy and six percent in the US would presumably have died from 'Covid's' flu-like symptoms with a range of other possible causes in conjunction with a test not testing for the 'virus'. Fox News reported that even more startling figures had emerged in one US county in which 410 of 422 deaths attributed to 'Covid-19' had other potentially deadly health conditions. The Italian National Health Institute said later that the average age of people dying with a 'Covid-19' diagnosis in Italy was about 81. Ninety percent were over 70 with ten percent over 90. In terms of other reasons to die some 80 percent had two or more chronic diseases with half having three or more including cardiovascular problems, diabetes, respiratory problems and cancer. Why is the phantom 'Covid-19' said to kill overwhelmingly old people and hardly affect the young? Old people continually die of many causes and especially respiratory disease which you can re-diagnose 'Covid-19' while young people die in tiny numbers by comparison and rarely of respiratory disease. Old people 'die of Covid' because they die of other things that can be redesignated 'Covid' and it really is that simple.

Flu has flown

The blueprint was in place. Get your illusory 'cases' from a test not testing for the 'virus' and redesignate other causes of death as 'Covid-19'. You have an instant 'pandemic' from something that is nothing more than a computer-generated fiction. With near-on a

billion people having 'flu-like' symptoms every year the potential was limitless and we can see why flu quickly and apparently miraculously disappeared *worldwide* by being diagnosed 'Covid-19'. The painfully bloody obvious was explained away by the childlike media in headlines like this in the UK '*Independent*': 'Not a single case of flu detected by Public Health England this year as Covid restrictions suppress virus'. I kid you not. The masking, social distancing and house arrest that did not make the 'Covid virus' disappear somehow did so with the 'flu virus'. Even worse the article, by a bloke called Samuel Lovett, suggested that maybe the masking, sanitising and other 'Covid' measures should continue to keep the flu away. With a ridiculousness that disturbs your breathing (it's 'Covid-19') the said Lovett wrote: 'With widespread social distancing and mask-wearing measures in place throughout the UK, the usual routes of transmission for influenza have been blocked.' He had absolutely no evidence to support that statement, but look at the consequences of him acknowledging the obvious. With flu not disappearing at all and only being relabelled 'Covid-19' he would have to contemplate that 'Covid' was a hoax on a scale that is hard to imagine. You need guts and commitment to truth to even go there and that's clearly something Samuel Lovett does not have in abundance. He would never have got it through the editors anyway.

Tens of thousands die in the United States alone every winter from flu including many with pneumonia complications. CDC figures record *45 million* Americans diagnosed with flu in 2017-2018 of which 61,000 died and some reports claim 80,000. Where was the same hysteria then that we have seen with 'Covid-19'? Some 250,000 Americans are admitted to hospital with pneumonia every year with about 50,000 cases proving fatal. About 65 million suffer respiratory disease every year and three million deaths makes this the third biggest cause of death worldwide. You only have to redesignate a portion of all these people 'Covid-19' and you have an instant global pandemic or the *appearance* of one. Why would doctors do this? They are told to do this and all but a few dare not refuse those who must be obeyed. Doctors in general are not researching their own

knowledge and instead take it direct and unquestioned from the authorities that own them and their careers. The authorities say they must now diagnose these symptoms 'Covid-19' and not flu, or whatever, and they do it. Dark suits say put 'Covid-19' on death certificates no matter what the cause of death and the doctors do it. Renegade Minds don't fall for the illusion that doctors and medical staff are all highly-intelligent, highly-principled, seekers of medical truth. *Some are*, but not the majority. They are repeaters, gofers, and yes sir, no sir, purveyors of what the system demands they purvey. The 'Covid' con is not merely confined to diseases of the lungs. Instructions to doctors to put 'Covid-19' on death certificates for anyone dying of *anything* within 28 days (or much more) of a positive test not testing for the 'virus' opened the floodgates. The term dying *with* 'Covid' and not *of* 'Covid' was coined to cover the truth. Whether it was a *with* or an *of* they were all added to the death numbers attributed to the 'deadly virus' compiled by national governments and globally by the Gates-funded Johns Hopkins operation in the United States that was so involved in those 'pandemic' simulations. Fraudulent deaths were added to the ever-growing list of fraudulent 'cases' from false positives from a false test. No wonder Professor Walter Ricciardi, scientific advisor to the Italian minister of health, said after the Lombardy hysteria had done its job that 'Covid' death rates were due to Italy having the second oldest population in the world and to *how hospitals record deaths*:

The way in which we code deaths in our country is very generous in the sense that all the people who die in hospitals with the coronavirus are deemed to be dying of the coronavirus. On re-evaluation by the National Institute of Health, only 12 per cent of death certificates have shown a direct causality from coronavirus, while 88 per cent of patients who have died have at least one pre-morbidity – many had two or three.

This is extraordinary enough when you consider the propaganda campaign to use Italy to terrify the world, but how can they even say twelve percent were genuine when the 'virus' has not been shown to exist, its 'code' is a computer program, and diagnosis comes from a test not testing for it? As in China, and soon the world, 'Covid-19' in

Italy was a redesignation of diagnosis. Lies and corruption were to become the real 'pandemic' fuelled by a pathetically-compliant medical system taking its orders from the tiny few at the top of their national hierarchy who answered to the World Health Organization which answers to Gates and the Cult. Doctors were told – ordered – to diagnose a particular set of symptoms 'Covid-19' and put that on the death certificate for any cause of death if the patient had tested positive with a test not testing for the virus or had 'Covid' symptoms like the flu. The United States even introduced big financial incentives to manipulate the figures with hospitals receiving £4,600 from the Medicare system for diagnosing someone with regular pneumonia, $13,000 if they made the diagnosis from the same symptoms 'Covid-19' pneumonia, and $39, 000 if they put a 'Covid' diagnosed patient on a ventilator that would almost certainly kill them. A few – painfully and pathetically few – medical whistleblowers revealed (before Cult-owned YouTube deleted their videos) that they had been instructed to 'let the patient crash' and put them straight on a ventilator instead of going through a series of far less intrusive and dangerous methods as they would have done before the pandemic hoax began and the financial incentives kicked in. We are talking cold-blooded murder given that ventilators are so damaging to respiratory systems they are usually the last step before heaven awaits. Renegade Minds never fall for the belief that people in white coats are all angels of mercy and cannot be full-on psychopaths. I have explained in detail in *The Answer* how what I am describing here played out across the world coordinated by the World Health Organization through the medical hierarchies in almost every country.

Medical scientist calls it

Information about the non-existence of the 'virus' began to emerge for me in late March, 2020, and mushroomed after that. I was sent an email by Sir Julian Rose, a writer, researcher, and organic farming promotor, from a medical scientist friend of his in the United States. Even at that early stage in March the scientist was able to explain

how the 'Covid' hoax was being manipulated. He said there were no reliable tests for a specific 'Covid-19 virus' and nor were there any reliable agencies or media outlets for reporting numbers of actual 'Covid-19' cases. We have seen in the long period since then that he was absolutely right. 'Every action and reaction to Covid-19 is based on totally flawed data and we simply cannot make accurate assessments,' he said. Most people diagnosed with 'Covid-19' were showing nothing more than cold and flu-like symptoms 'because most coronavirus strains *are* nothing more than cold/flu-like symptoms'. We had farcical situations like an 84-year-old German man testing positive for 'Covid-19' and his nursing home ordered to quarantine only for him to be found to have a common cold. The scientist described back then why PCR tests and what he called the 'Mickey Mouse test kits' were useless for what they were claimed to be identifying. 'The idea these kits can isolate a specific virus like Covid-19 is nonsense,' he said. Significantly, he pointed out that 'if you want to create a totally false panic about a totally false pandemic – pick a coronavirus'. This is exactly what the Cult-owned Gates, World Economic Forum and Johns Hopkins University did with their Event 201 'simulation' followed by their real-life simulation called the 'pandemic'. The scientist said that all you had to do was select the sickest of people with respiratory-type diseases in a single location – 'say Wuhan' – and administer PCR tests to them. You can then claim that anyone showing 'viral sequences' similar to a coronavirus 'which will inevitably be quite a few' is suffering from a 'new' disease:

> Since you already selected the sickest flu cases a fairly high proportion of your sample will go on to die. You can then say this 'new' virus has a CFR [case fatality rate] higher than the flu and use this to infuse more concern and do more tests which will of course produce more 'cases', which expands the testing, which produces yet more 'cases' and so on and so on. Before long you have your 'pandemic', and all you have done is use a simple test kit trick to convert the worst flu and pneumonia cases into something new that doesn't ACTUALLY EXIST [my emphasis].

He said that you then 'just run the same scam in other countries' and make sure to keep the fear message running high 'so that people

will feel panicky and less able to think critically'. The only problem to overcome was the fact *there is no* actual new deadly pathogen and only regular sick people. This meant that deaths from the 'new deadly pathogen' were going to be way too low for a real new deadly virus pandemic, but he said this could be overcome in the following ways – all of which would go on to happen:

1. You can claim this is just the beginning and more deaths are imminent [you underpin this with fantasy 'computer projections']. Use this as an excuse to quarantine everyone and then claim the quarantine prevented the expected millions of dead.

2. You can [say that people] 'minimizing' the dangers are irresponsible and bully them into not talking about numbers.

3. You can talk crap about made up numbers hoping to blind people with pseudoscience.

4. You can start testing well people (who, of course, will also likely have shreds of coronavirus [RNA] in them) and thus inflate your 'case figures' with 'asymptomatic carriers' (you will of course have to spin that to sound deadly even though any virologist knows the more symptom-less cases you have the less deadly is your pathogen).

The scientist said that if you take these simple steps 'you can have your own entirely manufactured pandemic up and running in weeks'. His analysis made so early in the hoax was brilliantly prophetic of what would actually unfold. Pulling all the information together in these recent chapters we have this is simple 1, 2, 3, of how you can delude virtually the entire human population into believing in a 'virus' that doesn't exist:

- A 'Covid case' is someone who tests positive with a test not testing for the 'virus'.

- A 'Covid death' is someone who dies of *any cause* within 28 days (or much longer) of testing positive with a test not testing for the 'virus.

- Asymptomatic means there is nothing wrong with you, but they claim you can pass on what you don't have to justify locking

down (quarantining) healthy people in totality.

The foundations of the hoax are that simple. A study involving ten million people in Wuhan, published in November, 2020, demolished the whole lie about those without symptoms passing on the 'virus'. They found '300 asymptomatic cases' and traced their contacts to find that not one of them was detected with the 'virus'. 'Asymptomatic' patients and their contacts were isolated for no less than two weeks and nothing changed. I know it's all crap, but if you are going to claim that those without symptoms can transmit 'the virus' then you must produce evidence for that and they never have. Even World Health Organization official Dr Maria Van Kerkhove, head of the emerging diseases and zoonosis unit, said as early as June, 2020, that she doubted the validity of asymptomatic transmission. She said that 'from the data we have, it still seems to be rare that an asymptomatic person actually transmits onward to a secondary individual' and by 'rare' she meant that she couldn't cite any case of asymptomatic transmission.

The Ferguson factor

The problem for the Cult as it headed into March, 2020, when the script had lockdown due to start, was that despite all the manipulation of the case and death figures they still did not have enough people alleged to have died from 'Covid' to justify mass house arrest. This was overcome in the way the scientist described: 'You can claim this is just the beginning and more deaths are imminent … Use this as an excuse to quarantine everyone and then claim the quarantine prevented the expected millions of dead.' Enter one Professor Neil Ferguson, the Gates-funded 'epidemiologist' at the Gates-funded Imperial College in London. Ferguson is Britain's Christian Drosten in that he has a dire record of predicting health outcomes, but is still called upon to advise government on the next health outcome when another 'crisis' comes along. This may seem to be a strange and ridiculous thing to do. Why would you keep turning for policy guidance to people who have a history of being

monumentally wrong? Ah, but it makes sense from the Cult point of view. These 'experts' keep on producing predictions that suit the Cult agenda for societal transformation and so it was with Neil Ferguson as he revealed his horrific (and clearly insane) computer model predictions that allowed lockdowns to be imposed in Britain, the United States and many other countries. Ferguson does not have even an A-level in biology and would appear to have no formal training in computer modelling, medicine or epidemiology, according to Derek Winton, an MSc in Computational Intelligence. He wrote an article somewhat aghast at what Ferguson did which included taking no account of respiratory disease 'seasonality' which means it is far worse in the winter months. Who would have thought that respiratory disease could be worse in the winter? Well, certainly not Ferguson.

The massively China-connected Imperial College and its bizarre professor provided the excuse for the long-incubated Chinese model of human control to travel westward at lightning speed. Imperial College confirms on its website that it collaborates with the Chinese Research Institute; publishes more than 600 research papers every year with Chinese research institutions; has 225 Chinese staff; 2,600 Chinese students – the biggest international group; 7,000 former students living in China which is the largest group outside the UK; and was selected for a tour by China's President Xi Jinping during his state visit to the UK in 2015. The college takes major donations from China and describes itself as the UK's number one university collaborator with Chinese research institutions. The China communist/fascist government did not appear phased by the woeful predictions of Ferguson and Imperial when during the lockdown that Ferguson induced the college signed a five-year collaboration deal with China tech giant Huawei that will have Huawei's indoor 5G network equipment installed at the college's West London tech campus along with an 'AI cloud platform'. The deal includes Chinese sponsorship of Imperial's Venture Catalyst entrepreneurship competition. Imperial is an example of the enormous influence the Chinese government has within British and North American

universities and research centres – and further afield. Up to 200 academics from more than a dozen UK universities are being investigated on suspicion of 'unintentionally' helping the Chinese government build weapons of mass destruction by 'transferring world-leading research in advanced military technology such as aircraft, missile designs and cyberweapons'. Similar scandals have broken in the United States, but it's all a coincidence. Imperial College serves the agenda in many other ways including the promotion of every aspect of the United Nations Agenda 21/2030 (the Great Reset) and produced computer models to show that human-caused 'climate change' is happening when in the real world it isn't. Imperial College is driving the climate agenda as it drives the 'Covid' agenda (both Cult hoaxes) while Patrick Vallance, the UK government's Chief Scientific Adviser on 'Covid', was named Chief Scientific Adviser to the UN 'climate change' conference known as COP26 hosted by the government in Glasgow, Scotland. 'Covid' and 'climate' are fundamentally connected.

Professor Woeful

From Imperial's bosom came Neil Ferguson still advising government despite his previous disasters and it was announced early on that he and other key people like UK Chief Medical Adviser Chris Whitty had caught the 'virus' as the propaganda story was being sold. Somehow they managed to survive and we had Prime Minister Boris Johnson admitted to hospital with what was said to be a severe version of the 'virus' in this same period. His whole policy and demeanour changed when he returned to Downing Street. It's a small world with these government advisors – especially in their communal connections to Gates – and Ferguson had partnered with Whitty to write a paper called 'Infectious disease: Tough choices to reduce Ebola transmission' which involved another scare-story that didn't happen. Ferguson's 'models' predicted that up to150, 000 could die from 'mad cow disease', or BSE, and its version in sheep if it was transmitted to humans. BSE was not transmitted and instead triggered by an organophosphate pesticide used to treat a pest on

cows. Fewer than 200 deaths followed from the human form. Models by Ferguson and his fellow incompetents led to the unnecessary culling of millions of pigs, cattle and sheep in the foot and mouth outbreak in 2001 which destroyed the lives and livelihoods of farmers and their families who had often spent decades building their herds and flocks. Vast numbers of these animals did not have foot and mouth and had no contact with the infection. Another 'expert' behind the cull was Professor Roy Anderson, a computer modeller at Imperial College specialising in the epidemiology of *human*, not animal, disease. Anderson has served on the Bill and Melinda Gates Grand Challenges in Global Health advisory board and chairs another Gates-funded organisation. Gates is everywhere.

In a precursor to the 'Covid' script Ferguson backed closing schools 'for prolonged periods' over the swine flu 'pandemic' in 2009 and said it would affect a third of the world population if it continued to spread at the speed he claimed to be happening. His mates at Imperial College said much the same and a news report said: 'One of the authors, the epidemiologist and disease modeller Neil Ferguson, who sits on the World Health Organisation's emergency committee for the outbreak, said the virus had "full pandemic potential".' Professor Liam Donaldson, the Chris Whitty of his day as Chief Medical Officer, said the worst case could see 30 percent of the British people infected by swine flu with 65,000 dying. Ferguson and Donaldson were indeed proved correct when at the end of the year the number of deaths attributed to swine flu was 392. The term 'expert' is rather liberally applied unfortunately, not least to complete idiots. Swine flu 'projections' were great for GlaxoSmithKline (GSK) as millions rolled in for its Pandemrix influenza vaccine which led to brain damage with children most affected. The British government (taxpayers) paid out more than £60 million in compensation after GSK was given immunity from prosecution. Yet another 'Covid' déjà vu. Swine flu was supposed to have broken out in Mexico, but Dr Wolfgang Wodarg, a German doctor, former member of parliament and critic of the 'Covid' hoax, observed 'the spread of swine flu' in Mexico City at the time. He

said: 'What we experienced in Mexico City was a very mild flu which did not kill more than usual – which killed even fewer people than usual.' Hyping the fear against all the facts is not unique to 'Covid' and has happened many times before. Ferguson is reported to have over-estimated the projected death toll of bird flu (H5N1) by some three million-fold, but bird flu vaccine makers again made a killing from the scare. This is some of the background to the Neil Ferguson who produced the perfectly-timed computer models in early 2020 predicting that half a million people would die in Britain without draconian lockdown and 2.2 million in the United States. Politicians panicked, people panicked, and lockdowns of alleged short duration were instigated to 'flatten the curve' of cases gleaned from a test not testing for the 'virus'. I said at the time that the public could forget the 'short duration' bit. This was an agenda to destroy the livelihoods of the population and force them into mass control through dependency and there was going to be nothing 'short' about it. American researcher Daniel Horowitz described the consequences of the 'models' spewed out by Gates-funded Ferguson and Imperial College:

> What led our government and the governments of many other countries into panic was a single Imperial College of UK study, funded by global warming activists, that predicted 2.2 million deaths if we didn't lock down the country. In addition, the reported 8-9% death rate in Italy scared us into thinking there was some other mutation of this virus that they got, which might have come here.
>
> Together with the fact that we were finally testing and had the ability to actually report new cases, we thought we were headed for a death spiral. But again … we can't flatten a curve if we don't know when the curve started.

How about it *never* started?

Giving them what they want

An investigation by German news outlet *Welt Am Sonntag (World on Sunday)* revealed how in March, 2020, the German government gathered together 'leading scientists from several research institutes and universities' and 'together, they were to produce a [modelling]

paper that would serve as legitimization for further tough political measures'. The Cult agenda was justified by computer modelling not based on evidence or reality; it was specifically constructed to justify the Cult demand for lockdowns all over the world to destroy the independent livelihoods of the global population. All these modellers and everyone responsible for the 'Covid' hoax have a date with a trial like those in Nuremberg after World War Two when Nazis faced the consequences of their war crimes. These corrupt-beyond-belief 'modellers' wrote the paper according to government instructions and it said that that if lockdown measures were lifted then up to one million Germans would die from 'Covid-19' adding that some would die 'agonizingly at home, gasping for breath' unable to be treated by hospitals that couldn't cope. All lies. No matter – it gave the Cult all that it wanted. What did long-time government 'modeller' Neil Ferguson say? If the UK and the United States didn't lockdown half a million would die in Britain and 2.2 million Americans. Anyone see a theme here? 'Modellers' are such a crucial part of the lockdown strategy that we should look into their background and follow the money. Researcher Rosemary Frei produced an excellent article headlined 'The Modelling-paper Mafiosi'. She highlights a guy called John Edmunds, a British epidemiologist, and professor in the Faculty of Epidemiology and Population Health at the London School of Hygiene & Tropical Medicine. He studied at Imperial College. Edmunds is a member of government 'Covid' advisory bodies which have been dictating policy, the New and Emerging Respiratory Virus Threats Advisory Group (NERVTAG) and the Scientific Advisory Group for Emergencies (SAGE).

Ferguson, another member of NERVTAG and SAGE, led the way with the original 'virus' and Edmunds has followed in the 'variant' stage and especially the so-called UK or Kent variant known as the 'Variant of Concern' (VOC) B.1.1.7. He said in a co-written report for the Centre for Mathematical modelling of Infectious Diseases at the London School of Hygiene and Tropical Medicine, with input from the Centre's 'Covid-19' Working Group, that there was 'a realistic

possibility that VOC B.1.1.7 is associated with an increased risk of death compared to non-VOC viruses'. Fear, fear, fear, get the vaccine, fear, fear, fear, get the vaccine. Rosemary Frei reveals that almost all the paper's authors and members of the modelling centre's 'Covid-19' Working Group receive funding from the Bill and Melinda Gates Foundation and/or the associated Gates-funded Wellcome Trust. The paper was published by e-journal *Medr χiv* which only publishes papers not peer-reviewed and the journal was established by an organisation headed by Facebook's Mark Zuckerberg and his missus. What a small world it is. Frei discovered that Edmunds is on the Scientific Advisory Board of the Coalition for Epidemic Preparedness Innovations (CEPI) which was established by the Bill and Melinda Gates Foundation, Klaus Schwab's Davos World Economic Forum and Big Pharma giant Wellcome. CEPI was 'launched in Davos [in 2017] to develop vaccines to stop future epidemics', according to its website. 'Our mission is to accelerate the development of vaccines against emerging infectious diseases and enable equitable access to these vaccines for people during outbreaks.' What kind people they are. Rosemary Frei reveals that Public Health England (PHE) director Susan Hopkins is an author of her organisation's non-peer-reviewed reports on 'new variants'. Hopkins is a professor of infectious diseases at London's Imperial College which is gifted tens of millions of dollars a year by the Bill and Melinda Gates Foundation. Gates-funded modelling disaster Neil Ferguson also co-authors Public Health England reports and he spoke in December, 2020, about the potential danger of the B.1.1.7. 'UK variant' promoted by Gates-funded modeller John Edmunds. When I come to the 'Covid vaccines' the 'new variants' will be shown for what they are – bollocks.

Connections, connections

All these people and modellers are lockdown-obsessed or, put another way, they demand what the Cult demands. Edmunds said in January, 2021, that to ease lockdowns too soon would be a disaster and they had to 'vaccinate much, much, much more widely than the

elderly'. Rosemary Frei highlights that Edmunds is married to Jeanne Pimenta who is described in a LinkedIn profile as director of epidemiology at GlaxoSmithKline (GSK) and she held shares in the company. Patrick Vallance, co-chair of SAGE and the government's Chief Scientific Adviser, is a former executive of GSK and has a deferred bonus of shares in the company worth £600,000. GSK has serious business connections with Bill Gates and is collaborating with mRNA-'vaccine' company CureVac to make 'vaccines' for the new variants that Edmunds is talking about. GSK is planning a 'Covid vaccine' with drug giant Sanofi. Puppet Prime Minister Boris Johnson announced in the spring of 2021 that up to 60 million vaccine doses were to be made at the GSK facility at Barnard Castle in the English North East. Barnard Castle, with a population of just 6,000, was famously visited in breach of lockdown rules in April, 2020, by Johnson aide Dominic Cummings who said that he drove there 'to test his eyesight' before driving back to London. Cummings would be better advised to test his integrity – not that it would take long. The GSK facility had nothing to do with his visit then although I'm sure Patrick Vallance would have been happy to arrange an introduction and some tea and biscuits. Ruthless psychopath Gates has made yet another fortune from vaccines in collaboration with Big Pharma companies and gushes at the phenomenal profits to be made from vaccines – more than a 20-to-1 return as he told one interviewer. Gates also tweeted in December, 2019, with the foreknowledge of what was coming: 'What's next for our foundation? I'm particularly excited about what the next year could mean for one of the best buys in global health: vaccines.'

Modeller John Edmunds is a big promotor of vaccines as all these people appear to be. He's the dean of the London School of Hygiene & Tropical Medicine's Faculty of Epidemiology and Population Health which is primarily funded by the Bill and Melinda Gates Foundation and the Gates-established and funded GAVI vaccine alliance which is the Gates vehicle to vaccinate the world. The organisation Doctors Without Borders has described GAVI as being 'aimed more at supporting drug-industry desires to promote new

products than at finding the most efficient and sustainable means for fighting the diseases of poverty'. But then that's why the psychopath Gates created it. John Edmunds said in a video that the London School of Hygiene & Tropical Medicine is involved in every aspect of vaccine development including large-scale clinical trials. He contends that mathematical modelling can show that vaccines protect individuals and society. That's on the basis of shit in and shit out, I take it. Edmunds serves on the UK Vaccine Network as does Ferguson and the government's foremost 'Covid' adviser, the grim-faced, dark-eyed Chris Whitty. The Vaccine Network says it works 'to support the government to identify and shortlist targeted investment opportunities for the most promising vaccines and vaccine technologies that will help combat infectious diseases with epidemic potential, and to address structural issues related to the UK's broader vaccine infrastructure'. Ferguson is acting Director of the Imperial College Vaccine Impact Modelling Consortium which has funding from the Bill and Melina Gates Foundation and the Gates-created GAVI 'vaccine alliance'. Anyone wonder why these characters see vaccines as the answer to every problem? Ferguson is wildly enthusiastic in his support for GAVI's campaign to vaccine children en masse in poor countries. You would expect someone like Gates who has constantly talked about the need to reduce the population to want to fund vaccines to keep more people alive. I'm sure that's why he does it. The John Edmunds London School of Hygiene & Tropical Medicine (LSHTM) has a Vaccines Manufacturing Innovation Centre which develops, tests and commercialises vaccines. Rosemary Frei writes:

> The vaccines centre also performs affiliated activities like combating 'vaccine hesitancy'. The latter includes the Vaccine Confidence Project. The project's stated purpose is, among other things, 'to provide analysis and guidance for early response and engagement with the public to ensure sustained confidence in vaccines and immunisation'. The Vaccine Confidence Project's director is LSHTM professor Heidi Larson. For more than a decade she's been researching how to combat vaccine hesitancy.

How the bloody hell can blokes like John Edmunds and Neil Ferguson with those connections and financial ties model 'virus' case

and death projections for the government and especially in a way that gives their paymasters like Gates exactly what they want? It's insane, but this is what you find throughout the world.

'Covid' is not dangerous, oops, wait, yes it is

Only days before Ferguson's nightmare scenario made Jackboot Johnson take Britain into a China-style lockdown to save us from a deadly 'virus' the UK government website gov.uk was reporting something very different to Ferguson on a page of official government guidance for 'high consequence infectious diseases (HCID)'. It said this about 'Covid-19':

As of 19 March 2020, COVID-19 *is no longer considered to be a high consequence infectious diseases (HCID) in the UK* [my emphasis]. The 4 nations public health HCID group made an interim recommendation in January 2020 to classify COVID-19 as an HCID. This was based on consideration of the UK HCID criteria about the virus and the disease with information available during the early stages of the outbreak.

Now that more is known about COVID-19, the public health bodies in the UK have reviewed the most up to date information about COVID-19 against the UK HCID criteria. They have determined that several features have now changed; in particular, more information is available about mortality rates (low overall), and there is now greater clinical awareness and a specific and sensitive laboratory test, the availability of which continues to increase. The Advisory Committee on Dangerous Pathogens (ACDP) is also of the opinion that COVID-19 should no longer be classified as an HCID.

Soon after the government had been exposed for downgrading the risk they upgraded it again and everyone was back to singing from the same Cult hymn book. Ferguson and his fellow Gates clones indicated that lockdowns and restrictions would have to continue until a Gates-funded vaccine was developed. Gates said the same because Ferguson and his like were repeating the Gates script which is the Cult script. 'Flatten the curve' became an ongoing nightmare of continuing lockdowns with periods in between of severe restrictions in pursuit of destroying independent incomes and had nothing to do with protecting health about which the Cult gives not a shit. Why wouldn't Ferguson be pushing a vaccine 'solution' when he's owned by vaccine-obsessive Gates who makes a fortune from them and

when Ferguson heads the Vaccine Impact Modelling Consortium at Imperial College funded by the Gates Foundation and GAVI, the 'vaccine alliance', created by Gates as his personal vaccine promotion operation? To compound the human catastrophe that Ferguson's 'models' did so much to create he was later exposed for breaking his own lockdown rules by having sexual liaisons with his married girlfriend Antonia Staats at his home while she was living at another location with her husband and children. Staats was a 'climate' activist and senior campaigner at the Soros-funded Avaaz which I wouldn't trust to tell me that grass is green. Ferguson had to resign as a government advisor over this hypocrisy in May, 2020, but after a period of quiet he was back being quoted by the ridiculous media on the need for more lockdowns and a vaccine rollout. Other government-advising 'scientists' from Imperial College' held the fort in his absence and said lockdown could be indefinite until a vaccine was found. The Cult script was being sung by the payrolled choir. I said there was no intention of going back to 'normal' when the 'vaccine' came because the 'vaccine' is part of a very different agenda that I will discuss in Human 2.0. Why would the Cult want to let the world go back to normal when destroying that normal forever was the whole point of what was happening? House arrest, closing businesses and schools through lockdown, (un)social distancing and masks all followed the Ferguson fantasy models. Again as I predicted (these people are so predictable) when the 'vaccine' arrived we were told that house arrest, lockdown, (un)social distancing and masks would still have to continue. I will deal with the masks in the next chapter because they are of fundamental importance.

Where's the 'pandemic'?

Any mildly in-depth assessment of the figures revealed what was really going on. Cult-funded and controlled organisations still have genuine people working within them such is the number involved. So it is with Genevieve Briand, assistant program director of the Applied Economics master's degree program at Johns Hopkins

University. She analysed the impact that 'Covid-19' had on deaths from *all* causes in the United States using official data from the CDC for the period from early February to early September, 2020. She found that allegedly 'Covid' *related*-deaths exceeded those from heart disease which she found strange with heart disease always the biggest cause of fatalities. Her research became even more significant when she noted the sudden decline in 2020 of *all* non-'Covid' deaths: 'This trend is completely contrary to the pattern observed in all previous years … the total decrease in deaths by other causes almost exactly equals the increase in deaths by Covid-19.' This was such a game, set and match in terms of what was happening that Johns Hopkins University deleted the article on the grounds that it 'was being used to support false and dangerous inaccuracies about the impact of the pandemic'. No – because it exposed the scam from official CDC figures and this was confirmed when those figures were published in January, 2021. Here we can see the effect of people dying from heart attacks, cancer, road accidents and gunshot wounds – *anything* – having 'Covid-19' on the death certificate along with those diagnosed from 'symptoms' who had even not tested positive with a test not testing for the 'virus'. I am not kidding with the gunshot wounds, by the way. Brenda Bock, coroner in Grand County, Colorado, revealed that two gunshot victims tested positive for the 'virus' within the previous 30 days and were therefore classified as 'Covid deaths'. Bock said: 'These two people had tested positive for Covid, but that's not what killed them. A gunshot wound is what killed them.' She said she had not even finished her investigation when the state listed the gunshot victims as deaths due to the 'virus'. The death and case figures for 'Covid-19' are an absolute joke and yet they are repeated like parrots by the media, politicians and alleged medical 'experts'. The official Cult narrative is the only show in town.

Genevieve Briand found that deaths from all causes were not exceptional in 2020 compared with previous years and a Spanish magazine published figures that said the same about Spain which was a 'Covid' propaganda hotspot at one point. *Discovery Salud*, a

health and medicine magazine, quoted government figures which showed how 17,000 *fewer* people died in Spain in 2020 than in 2019 and more than 26,000 fewer than in 2018. The age-standardised mortality rate for England and Wales when age distribution is taken into account was significantly lower in 2020 than the 1970s, 80s and 90s, and was only the ninth highest since 2000. Where is the 'pandemic'?

Post mortems and autopsies virtually disappeared for 'Covid' deaths amid claims that 'virus-infected' bodily fluids posed a risk to those carrying out the autopsy. This was rejected by renowned German pathologist and forensic doctor Klaus Püschel who said that he and his staff had by then done 150 autopsies on 'Covid' patients with no problems at all. He said they were needed to know why some 'Covid' patients suffered blood clots and not severe respiratory infections. The 'virus' is, after all, called SARS or 'severe acute respiratory syndrome'. I highlighted in the spring of 2020 this phenomenon and quoted New York intensive care doctor Cameron Kyle-Sidell who posted a soon deleted YouTube video to say that they had been told to prepare to treat an infectious disease called 'Covid-19', but that was not what they were dealing with. Instead he likened the lung condition of the most severely ill patients to what you would expect with cabin depressurisation in a plane at 30,000 feet or someone dropped on the top of Everest without oxygen or acclimatisation. I have never said this is not happening to a small minority of alleged 'Covid' patients – I am saying this is not caused by a phantom 'contagious virus'. Indeed Kyle-Sidell said that 'Covid-19' was not the disease they were told was coming their way. 'We are operating under a medical paradigm that is untrue,' he said, and he believed they were treating the wrong disease: 'These people are being slowly starved of oxygen.' Patients would take off their oxygen masks in a state of fear and stress and while they were blue in the face on the brink of death. They did not look like patients dying of pneumonia. You can see why they don't want autopsies when their virus doesn't exist and there is another condition in some people that they don't wish to be uncovered. I should add here that

the 5G system of millimetre waves was being rapidly introduced around the world in 2020 and even more so now as they fire 5G at the Earth from satellites. At 60 gigahertz within the 5G range that frequency interacts with the oxygen molecule and stops people breathing in sufficient oxygen to be absorbed into the bloodstream. They are installing 5G in schools and hospitals. The world is not mad or anything. 5G can cause major changes to the lungs and blood as I detail in *The Answer* and these consequences are labelled 'Covid-19', the alleged symptoms of which can be caused by 5G and other electromagnetic frequencies as cells respond to radiation poisoning.

The 'Covid death' scam

Dr Scott Jensen, a Minnesota state senator and medical doctor, exposed 'Covid' Medicare payment incentives to hospitals and death certificate manipulation. He said he was sent a seven-page document by the US Department of Health 'coaching' him on how to fill out death certificates which had never happened before. The document said that he didn't need to have a laboratory test for 'Covid-19' to put that on the death certificate and that shocked him when death certificates are supposed to be about facts. Jensen described how doctors had been 'encouraged, if not pressured' to make a diagnosis of 'Covid-19' if they thought it was probable or *'presumed*'. No positive test was necessary – not that this would have mattered anyway. He said doctors were told to diagnose 'Covid' by symptoms when these were the same as colds, allergies, other respiratory problems, and certainly with influenza which 'disappeared' in the 'Covid' era. A common sniffle was enough to get the dreaded verdict. Ontario authorities decreed that a single care home resident with *one* symptom from a long list must lead to the isolation of the entire home. Other courageous doctors like Jensen made the same point about death figure manipulation and how deaths by other causes were falling while 'Covid-19 deaths' were rising at the same rate due to re-diagnosis. Their videos rarely survive long on YouTube with its Cult-supporting algorithms courtesy of CEO Susan Wojcicki and her bosses at Google. Figure-tampering was so glaring

and ubiquitous that even officials were letting it slip or outright saying it. UK chief scientific adviser Patrick Vallance said on one occasion that 'Covid' on the death certificate doesn't mean 'Covid' was the cause of death (so why the hell is it there?) and we had the rare sight of a BBC reporter telling the truth when she said: 'Someone could be successfully treated for Covid, in say April, discharged, and then in June, get run over by a bus and die … That person would still be counted as a Covid death in England.' Yet the BBC and the rest of the world media went on repeating the case and death figures as if they were real. Illinois Public Health Director Dr Ngozi Ezike revealed the deceit while her bosses must have been clenching their buttocks:

> If you were in a hospice and given a few weeks to live and you were then found to have Covid that would be counted as a Covid death. [There might be] a clear alternate cause, but it is still listed as a Covid death. So everyone listed as a Covid death doesn't mean that was the cause of the death, but that they had Covid at the time of death.

Yes, a 'Covid virus' never shown to exist and tested for with a test not testing for the 'virus'. In the first period of the pandemic hoax through the spring of 2020 the process began of designating almost everything a 'Covid' death and this has continued ever since. I sat in a restaurant one night listening to a loud conversation on the next table where a family was discussing in bewilderment how a relative who had no symptoms of 'Covid', and had died of a long-term problem, could have been diagnosed a death by the 'virus'. I could understand their bewilderment. If they read this book they will know why this medical fraud has been perpetrated the world over.

Some media truth shock

The media ignored the evidence of death certificate fraud until eventually one columnist did speak out when she saw it first-hand. Bel Mooney is a long-time national newspaper journalist in Britain currently working for the *Daily Mail*. Her article on February 19th, 2021, carried this headline: 'My dad Ted passed three Covid tests

and died of a chronic illness yet he's officially one of Britain's 120,000 victims of the virus and is far from alone ... so how many more are there?' She told how her 99-year-old father was in a care home with a long-standing chronic obstructive pulmonary disease and vascular dementia. Maybe, but he was still aware enough to tell her from the start that there was no 'virus' and he refused the 'vaccine' for that reason. His death was not unexpected given his chronic health problems and Mooney said she was shocked to find that 'Covid-19' was declared the cause of death on his death certificate. She said this was a 'bizarre and unacceptable untruth' for a man with long-time health problems who had tested negative twice at the home for the 'virus'. I was also shocked by this story although not by what she said. I had been highlighting the death certificate manipulation for ten months. It was the confirmation that a professional full-time journalist only realised this was going on when it affected her directly and neither did she know that whether her dad tested positive or negative was irrelevant with the test not testing for the 'virus'. Where had she been? She said she did not believe in 'conspiracy theories' without knowing I'm sure that this and 'conspiracy theorists' were terms put into widespread circulation by the CIA in the 1960s to discredit those who did not accept the ridiculous official story of the Kennedy assassination. A blanket statement of 'I don't believe in conspiracy theories' is always bizarre. The dictionary definition of the term alone means the world is drowning in conspiracies. What she said was even more daft when her dad had just been affected by the 'Covid' conspiracy. Why else does she think that 'Covid-19' was going on the death certificates of people who died of something else?

To be fair once she saw from personal experience what was happening she didn't mince words. Mooney was called by the care home on the morning of February 9th to be told her father had died in his sleep. When she asked for the official cause of death what came back was 'Covid-19'. Mooney challenged this and was told there had been deaths from Covid on the dementia floor (confirmed by a test not testing for the 'virus') so they considered it 'reasonable

to assume'. 'But doctor,' Mooney rightly protested, 'an assumption isn't a diagnosis.' She said she didn't blame the perfectly decent and sympathetic doctor – 'he was just doing his job'. Sorry, but that's *bullshit*. He wasn't doing his job at all. He was putting a false cause of death on the death certificate and that is a criminal offence for which he should be brought to account and the same with the millions of doctors worldwide who have done the same. They were not doing their job they were following orders and that must not wash at new Nuremberg trials any more than it did at the first ones. Mooney's doctor was 'assuming' (presuming) as he was told to, but 'just following orders' makes no difference to his actions. A doctor's job is to serve the patient and the truth, not follow orders, but that's what they have done all over the world and played a central part in making the 'Covid' hoax possible with all its catastrophic consequences for humanity. Shame on them and they must answer for their actions. Mooney said her disquiet worsened when she registered her father's death by telephone and was told by the registrar there had been very many other cases like hers where 'the deceased' had not tested positive for 'Covid' yet it was recorded as the cause of death. The test may not matter, but those involved at their level *think* it matters and it shows a callous disregard for accurate diagnosis. The pressure to do this is coming from the top of the national 'health' pyramids which in turn obey the World Health Organization which obeys Gates and the Cult. Mooney said the registrar agreed that this must distort the national figures adding that 'the strangest thing is that every winter we record countless deaths from flu, and this winter there have been none. Not one!' She asked if the registrar thought deaths from flu were being misdiagnosed and lumped together with 'Covid' deaths. The answer was a 'puzzled yes'. Mooney said that the funeral director said the same about 'Covid' deaths which had nothing to do with 'Covid'. They had lost count of the number of families upset by this and other funeral companies in different countries have had the same experience. Mooney wrote:

The nightly shroud-waving and shocking close-ups of pain imposed on us by the TV news bewildered and terrified the population into eager compliance with lockdowns. We were invited to 'save the NHS' and to grieve for strangers – the real-life loved ones behind those shocking death counts. Why would the public imagine what I now fear, namely that the way Covid-19 death statistics are compiled might make the numbers seem greater than they are?

Oh, just a little bit – like 100 percent.

Do the maths

Mooney asked why a country would wish to skew its mortality figures by wrongly certifying deaths? What had been going on? Well, if you don't believe in conspiracies you will never find the answer which is that *it's a conspiracy*. She did, however, describe what she had discovered as a 'national scandal'. In reality it's a global scandal and happening everywhere. Pillars of this conspiracy were all put into place before the button was pressed with the Drosten PCR protocol and high amplifications to produce the cases and death certificate changes to secure illusory 'Covid' deaths. Mooney notes that normally two doctors were needed to certify a death, with one having to know the patient, and how the rules were changed in the spring of 2020 to allow one doctor to do this. In the same period 'Covid deaths' were decreed to be all cases where Covid-19 was put on the death certificate even without a positive test or any symptoms. Mooney asked: 'How many of the 30,851 (as of January 15) care home resident deaths with Covid-19 on the certificate (32.4 per cent of all deaths so far) were based on an assumption, like that of my father? And what has that done to our national psyche?'All of them is the answer to the first question and it has devastated and dismantled the national psyche, actually the global psyche, on a colossal scale. In the UK case and death data is compiled by organisations like Public Health England (PHE) and the Office for National Statistics (ONS). Mooney highlights the insane policy of counting a death from any cause as 'Covid-19' if this happens within 28 days of a positive test (with a test not testing for the 'virus') and she points out that ONS statistics reflect deaths 'involving Covid' 'or due to Covid' which meant in practice any

death where 'Covid-19' was mentioned on the death certificate. She described the consequences of this fraud:

Most people will accept the narrative they are fed, so panicky governments here and in Europe witnessed the harsh measures enacted in totalitarian China and jumped into lockdown. Headlines about Covid deaths tolled like the knell that would bring doomsday to us all. Fear stalked our empty streets. Politicians parroted the frankly ridiculous aim of 'zero Covid' and shut down the economy, while most British people agreed that lockdown was essential and (astonishingly to me, as a patriotic Brit) even wanted more restrictions.

For what? Lies on death certificates? Never mind the grim toll of lives ruined, suicides, schools closed, rising inequality, depression, cancelled hospital treatments, cancer patients in a torture of waiting, poverty, economic devastation, loneliness, families kept apart, and so on. How many lives have been lost as a direct result of lockdown?

She said that we could join in a national chorus of shock and horror at reaching the 120,000 death toll which was surely certain to have been totally skewed all along, but what about the human cost of lockdown justified by these 'death figures'? *The British Medical Journal* had reported a 1,493 percent increase in cases of children taken to Great Ormond Street Hospital with abusive head injuries alone and then there was the effect on families:

Perhaps the most shocking thing about all this is that families have been kept apart – and obeyed the most irrational, changing rules at the whim of government – because they believed in the statistics. They succumbed to fear, which his generation rejected in that war fought for freedom. Dad (God rest his soul) would be angry. And so am I.

Another theme to watch is that in the winter months when there are more deaths from all causes they focus on 'Covid' deaths and in the summer when the British Lung Foundation says respiratory disease plummets by 80 percent they rage on about 'cases'. Either way fascism on population is always the answer.

Nazi eugenics in the 21st century

Elderly people in care homes have been isolated from their families month after lonely month with no contact with relatives and grandchildren who were banned from seeing them. We were told

that lockdown fascism was to 'protect the vulnerable' like elderly people. At the same time Do Not Resuscitate (DNR) orders were placed on their medical files so that if they needed resuscitation it wasn't done and 'Covid-19' went on their death certificates. Old people were not being 'protected' they were being culled – murdered in truth. DNR orders were being decreed for disabled and young people with learning difficulties or psychological problems. The UK Care Quality Commission, a non-departmental body of the Department of Health and Social Care, found that 34 percent of those working in health and social care were pressured into placing 'do not attempt cardiopulmonary resuscitation' orders on 'Covid' patients who suffered from disabilities and learning difficulties without involving the patient or their families in the decision. UK judges ruled that an elderly woman with dementia should have the DNA-manipulating 'Covid vaccine' against her son's wishes and that a man with severe learning difficulties should have the jab despite his family's objections. Never mind that many had already died. The judiciary always supports doctors and government in fascist dictatorships. They wouldn't dare do otherwise. A horrific video was posted showing fascist officers from Los Angeles police forcibly giving the 'Covid' shot to women with special needs who were screaming that they didn't want it. The same fascists are seen giving the jab to a sleeping elderly woman in a care home. This is straight out of the Nazi playbook. Hitler's Nazis committed mass murder of the mentally ill and physically disabled throughout Germany and occupied territories in the programme that became known as Aktion T4, or just T4. Sabbatian-controlled Hitler and his grotesque crazies set out to kill those they considered useless and unnecessary. The Reich Committee for the Scientific Registering of Hereditary and Congenital Illnesses registered the births of babies identified by physicians to have 'defects'. By 1941 alone more than 5,000 children were murdered by the state and it is estimated that in total the number of innocent people killed in Aktion T4 was between 275,000 and 300,000. Parents were told their children had been sent away for 'special treatment' never to return. It is rather pathetic to see claims about plans for new extermination camps being dismissed today

when the same force behind current events did precisely that 80 years ago. Margaret Sanger was a Cult operative who used 'birth control' to sanitise her programme of eugenics. Organisations she founded became what is now Planned Parenthood. Sanger proposed that 'the whole dysgenic population would have its choice of segregation or sterilization'. These included epileptics, 'feeble-minded', and prostitutes. Sanger opposed charity because it perpetuated 'human waste'. She reveals the Cult mentality and if anyone thinks that extermination camps are a 'conspiracy theory' their naivety is touching if breathtakingly stupid.

If you don't believe that doctors can act with callous disregard for their patients it is worth considering that doctors and medical staff agreed to put government-decreed DNR orders on medical files and do nothing when resuscitation is called for. I don't know what you call such people in your house. In mine they are Nazis from the Josef Mengele School of Medicine. Phenomenal numbers of old people have died worldwide from the effects of lockdown, depression, lack of treatment, the 'vaccine' (more later) and losing the will to live. A common response at the start of the manufactured pandemic was to remove old people from hospital beds and transfer them to nursing homes. The decision would result in a mass cull of elderly people in those homes through lack of treatment – *not* 'Covid'. Care home whistleblowers have told how once the 'Covid' era began doctors would not come to their homes to treat patients and they were begging for drugs like antibiotics that often never came. The most infamous example was ordered by New York governor Andrew Cuomo, brother of a moronic CNN host, who amazingly was given an Emmy Award for his handling of the 'Covid crisis' by the ridiculous Wokers that hand them out. Just how ridiculous could be seen in February, 2021, when a Department of Justice and FBI investigation began into how thousands of old people in New York died in nursing homes after being discharged from hospital to make way for 'Covid' patients on Cuomo's say-so – and how he and his staff covered up these facts. This couldn't have happened to a nicer psychopath. Even then there was a 'Covid' spin. Reports said that

thousands of old people who tested positive for 'Covid' in hospital were transferred to nursing homes to both die of 'Covid' and transmit it to others. No – they were in hospital because they were ill and the fact that they tested positive with a test not testing for the 'virus' is irrelevant. They were ill often with respiratory diseases ubiquitous in old people near the end of their lives. Their transfer out of hospital meant that their treatment stopped and many would go on to die.

They're old. Who gives a damn?

I have exposed in the books for decades the Cult plan to cull the world's old people and even to introduce at some point what they call a 'demise pill' which at a certain age everyone would take and be out of here by law. In March, 2021, Spain legalised euthanasia and assisted suicide following the Netherlands, Belgium, Luxembourg and Canada on the Tiptoe to the demise pill. Treatment of old people by many 'care' homes has been a disgrace in the 'Covid' era. There are many, many, caring staff – I know some. There have, however, been legions of stories about callous treatment of old people and their families. Police were called when families came to take their loved ones home in the light of isolation that was killing them. They became prisoners of the state. Care home residents in insane, fascist Ontario, Canada, were not allowed to leave their *room* once the 'Covid' hoax began. UK staff have even wheeled elderly people away from windows where family members were talking with them. Oriana Criscuolo from Stockport in the English North West dropped off some things for her 80-year-old father who has Parkinson's disease and dementia and she wanted to wave to him through a ground-floor window. She was told that was 'illegal'. When she went anyway they closed the curtains in the middle of the day. Oriana said:

> It's just unbelievable. I cannot understand how care home staff – people who are being paid to care – have become so uncaring. Their behaviour is inhumane and cruel. It's beyond belief.

She was right and this was not a one-off. What a way to end your life in such loveless circumstances. UK registered nurse Nicky Millen, a proper old school nurse for 40 years, said that when she started her career care was based on dignity, choice, compassion and empathy. Now she said 'the things that are important to me have gone out of the window.' She was appalled that people were dying without their loved ones and saying goodbye on iPads. Nicky described how a distressed 89-year-old lady stroked her face and asked her 'how many paracetamol would it take to finish me off'. Life was no longer worth living while not seeing her family. Nicky said she was humiliated in front of the ward staff and patients for letting the lady stroke her face and giving her a cuddle. Such is the dehumanisation that the 'Covid' hoax has brought to the surface. Nicky worked in care homes where patients told her they were being held prisoner. 'I want to live until I die', one said to her. 'I had a lady in tears because she hadn't seen her great-grandson.' Nicky was compassionate old school meeting psychopathic New Normal. She also said she had worked on a 'Covid' ward with no 'Covid' patients. Jewish writer Shai Held wrote an article in March, 2020, which was headlined 'The Staggering, Heartless Cruelty Toward the Elderly'. What he described was happening from the earliest days of lockdown. He said 'the elderly' were considered a group and not unique individuals (the way of the Woke). Shai Held said:

Notice how the all-too-familiar rhetoric of dehumanization works: 'The elderly' are bunched together as a faceless mass, all of them considered culprits and thus effectively deserving of the suffering the pandemic will inflict upon them. Lost entirely is the fact that the elderly are individual human beings, each with a distinctive face and voice, each with hopes and dreams, memories and regrets, friendships and marriages, loves lost and loves sustained.

'The elderly' have become another dehumanised group for which anything goes and for many that has resulted in cold disregard for their rights and their life. The distinctive face that Held talks about is designed to be deleted by masks until everyone is part of a faceless mass.

‘War-zone’ hospitals myth

Again and again medical professionals have told me what was really going on and how hospitals ‘overrun like war zones’ according to the media were virtually empty. The mantra from medical whistleblowers was please don’t use my name or my career is over. Citizen journalists around the world sneaked into hospitals to film evidence exposing the ‘war-zone’ lie. They really *were* largely empty with closed wards and operating theatres. I met a hospital worker in my town on the Isle of Wight during the first lockdown in 2020 who said the only island hospital had never been so quiet. Lockdown was justified by the psychopaths to stop hospitals being overrun. At the same time that the island hospital was near-empty the military arrived here to provide *extra beds*. It was all propaganda to ramp up the fear to ensure compliance with fascism as were never-used temporary hospitals with thousands of beds known as Nightingales and never-used make-shift mortuaries opened by the criminal UK government. A man who helped to install those extra island beds attributed to the army said they were never used and the hospital was empty. Doctors and nurses ‘stood around talking or on their phones, wandering down to us to see what we were doing’. There were no masks or social distancing. He accused the useless local island paper, the *County Press*, of ‘pumping the fear as if our hospital was overrun and we only have one so it should have been’. He described ambulances parked up with crews outside in deck chairs. When his brother called an ambulance he was told there was a two-hour backlog which he called ‘bullshit’. An old lady on the island fell ‘and was in a bad way’, but a caller who rang for an ambulance was told the situation wasn’t urgent enough. Ambulance stations were working under capacity while people would hear ambulances with sirens blaring driving through the streets. When those living near the stations realised what was going on they would follow them as they left, circulated around an urban area with the sirens going, and then came back without stopping. All this was to increase levels of fear and the same goes for the ‘ventilator shortage crisis’ that cost tens of millions for hastily produced ventilators never to be used.

Ambulance crews that agreed to be exploited in this way for fear propaganda might find themselves a mirror. I wish them well with that. Empty hospitals were the obvious consequence of treatment and diagnoses of non-'Covid' conditions cancelled and those involved handed a death sentence. People have been dying at home from undiagnosed and untreated cancer, heart disease and other life-threatening conditions to allow empty hospitals to deal with a 'pandemic' that wasn't happening.

Death of the innocent

'War-zones' have been laying off nursing staff, even doctors where they can. There was no work for them. Lockdown was justified by saving lives and protecting the vulnerable they were actually killing with DNR orders and preventing empty hospitals being 'overrun'. In Britain the mantra of stay at home to 'save the NHS' was everywhere and across the world the same story was being sold when it was all lies. Two California doctors, Dan Erickson and Artin Massihi at Accelerated Urgent Care in Bakersfield, held a news conference in April, 2020, to say that intensive care units in California were 'empty, essentially', with hospitals shutting floors, not treating patients and laying off doctors. The California health system was working at minimum capacity 'getting rid of doctors because we just don't have the volume'. They said that people with conditions such as heart disease and cancer were not coming to hospital out of fear of 'Covid-19'. Their video was deleted by Susan Wojcicki's Cult-owned YouTube after reaching five million views. Florida governor Ron Desantis, who rejected the severe lockdowns of other states and is being targeted for doing so, said that in March, 2020, every US governor was given models claiming they would run out of hospital beds in days. That was never going to happen and the 'modellers' knew it. Deceit can be found at every level of the system. Urgent children's operations were cancelled including fracture repairs and biopsies to spot cancer. Eric Nicholls, a consultant paediatrician, said 'this is obviously concerning and we need to return to normal operating and to increase capacity as soon as possible'. Psychopaths

in power were rather less concerned *because* they are psychopaths. Deletion of urgent care and diagnosis has been happening all over the world and how many kids and others have died as a result of the actions of these cold and heartless lunatics dictating 'health' policy? The number must be stratospheric. Richard Sullivan, professor of cancer and global health at King's College London, said people feared 'Covid' more than cancer such was the campaign of fear. 'Years of lost life will be quite dramatic', Sullivan said, with 'a huge amount of avoidable mortality'. Sarah Woolnough, executive director for policy at Cancer Research UK, said there had been a 75 percent drop in urgent referrals to hospitals by family doctors of people with suspected cancer. Sullivan said that 'a lot of services have had to scale back – we've seen a dramatic decrease in the amount of elective cancer surgery'. Lockdown deaths worldwide has been absolutely fantastic with the *New York Post* reporting how data confirmed that 'lockdowns end more lives than they save':

> There was a sharp decline in visits to emergency rooms and an increase in fatal heart attacks because patients didn't receive prompt treatment. Many fewer people were screened for cancer. Social isolation contributed to excess deaths from dementia and Alzheimer's.
>
> Researchers predicted that the social and economic upheaval would lead to tens of thousands of "deaths of despair" from drug overdoses, alcoholism and suicide. As unemployment surged and mental-health and substance-abuse treatment programs were interrupted, the reported levels of anxiety, depression and suicidal thoughts increased dramatically, as did alcohol sales and fatal drug overdoses.

This has been happening while nurses and other staff had so much time on their hands in the 'war-zones' that Tic-Tok dancing videos began appearing across the Internet with medical staff dancing around in empty wards and corridors as people died at home from causes that would normally have been treated in hospital.

Mentions in dispatches

One brave and truth-committed whistleblower was Louise Hampton, a call handler with the UK NHS who made a viral Internet video saying she had done 'fuck all' during the 'pandemic'

which was 'a load of bollocks'. She said that 'Covid-19' was rebranded flu and of course she lost her job. This is what happens in the medical and endless other professions now when you tell the truth. Louise filmed inside 'war-zone' accident and emergency departments to show they were empty and I mean *empty* as in no one there. The mainstream media could have done the same and blown the gaff on the whole conspiracy. They haven't to their eternal shame. Not that most 'journalists' seem capable of manifesting shame as with the psychopaths they slavishly repeat without question. The relative few who were admitted with serious health problems were left to die alone with no loved ones allowed to see them because of 'Covid' rules and they included kids dying without the comfort of mum and dad at their bedside while the evil behind this couldn't give a damn. It was all good fun to them. A Scottish NHS staff nurse publicly quit in the spring of 2021 saying: 'I can no longer be part of the lies and the corruption by the government.' She said hospitals 'aren't full, the beds aren't full, beds have been shut, wards have been shut'. Hospitals were never busy throughout 'Covid'. The staff nurse said that Nicola Sturgeon, tragically the leader of the Scottish government, was on television saying save the hospitals and the NHS – 'but the beds are empty' and 'we've not seen flu, we always see flu every year'. She wrote to government and spoke with her union Unison (the unions are Cult-compromised and *useless*, but nothing changed. Many of her colleagues were scared of losing their jobs if they spoke out as they wanted to. She said nursing staff were being affected by wearing masks all day and 'my head is splitting every shift from wearing a mask'. The NHS is part of the fascist tyranny and must be dismantled so we can start again with human beings in charge. (Ironically, hospitals were reported to be busier again when official 'Covid' cases *fell* in spring/summer of 2021 and many other conditions required treatment at the same time as *the fake vaccine rollout*.)

I will cover the 'Covid vaccine' scam in detail later, but it is another indicator of the sickening disregard for human life that I am highlighting here. The DNA-manipulating concoctions do not fulfil

the definition of a 'vaccine', have never been used on humans before and were given only emergency approval because trials were not completed and they continued using the unknowing public. The result was what a NHS senior nurse with responsibility for 'vaccine' procedure said was 'genocide'. She said the 'vaccines' were not 'vaccines'. They had not been shown to be safe and claims about their effectiveness by drug companies were 'poetic licence'. She described what was happening as a 'horrid act of human annihilation'. The nurse said that management had instigated a policy of not providing a Patient Information Leaflet (PIL) before people were 'vaccinated' even though health care professionals are supposed to do this according to protocol. Patients should also be told that they are taking part in an ongoing clinical trial. Her challenges to what is happening had seen her excluded from meetings and ridiculed in others. She said she was told to 'watch my step … or I would find myself surplus to requirements'. The nurse, who spoke anonymously in fear of her career, said she asked her NHS manager why he/she was content with taking part in genocide against those having the 'vaccines'. The reply was that everyone had to play their part and to 'put up, shut up, and get it done'. Government was 'leaning heavily' on NHS management which was clearly leaning heavily on staff. This is how the global 'medical' hierarchy operates and it starts with the Cult and its World Health Organization.

She told the story of a doctor who had the Pfizer jab and when questioned had no idea what was in it. The doctor had never read the literature. We have to stop treating doctors as intellectual giants when so many are moral and medical pygmies. The doctor did not even know that the 'vaccines' were not fully approved or that their trials were ongoing. They were, however, asking their patients if they minded taking part in follow-ups for research purposes – yes, the *ongoing clinical trial*. The nurse said the doctor's ignorance was not rare and she had spoken to a hospital consultant who had the jab without any idea of the background or that the 'trials' had not been completed. Nurses and pharmacists had shown the same ignorance.

'My NHS colleagues have forsaken their duty of care, broken their code of conduct – Hippocratic Oath – and have been brainwashed just the same as the majority of the UK public through propaganda …' She said she had not been able to recruit a single NHS colleague, doctor, nurse or pharmacist to stand with her and speak out. Her union had refused to help. She said that if the genocide came to light she would not hesitate to give evidence at a Nuremberg-type trial against those in power who could have affected the outcomes but didn't.

And all for what?

To put the nonsense into perspective let's say the 'virus' does exist and let's go completely crazy and accept that the official manipulated figures for cases and deaths are accurate. *Even then* a study by Stanford University epidemiologist Dr John Ioannidis published on the World Health Organization website produced an average infection to fatality rate of … *0.23 percent!* Ioannidis said: 'If one could sample equally from all locations globally, the median infection fatality rate might even be substantially lower than the 0.23% observed in my analysis.' For healthy people under 70 it was … *0.05 percent*! This compares with the 3.4 percent claimed by the Cult-owned World Health Organization when the hoax was first played and maximum fear needed to be generated. An updated Stanford study in April, 2021, put the 'infection' to 'fatality' rate at just 0.15 percent. Another team of scientists led by Megan O'Driscoll and Henrik Salje studied data from 45 countries and published their findings on the Nature website. For children and young people the figure is so small it virtually does not register although authorities will be hyping dangers to the young when they introduce DNA-manipulating 'vaccines' for children. The O'Driscoll study produced an average infection-fatality figure of 0.003 for children from birth to four; 0.001 for 5 to 14; 0.003 for 15 to 19; and it was still only 0.456 up to 64. To claim that children must be 'vaccinated' to protect them from 'Covid' is an obvious lie and so there must be another reason and there is. What's more the average age of a 'Covid' death is akin

to the average age that people die in general. The average age of death in England is about 80 for men and 83 for women. The average age of death from alleged 'Covid' is between 82 and 83. California doctors, Dan Erickson and Artin Massihi, said at their April media conference that projection models of millions of deaths had been 'woefully inaccurate'. They produced detailed figures showing that Californians had a 0.03 chance of dying from 'Covid' based on the number of people who tested positive (with a test not testing for the 'virus'). Erickson said there was a 0.1 percent chance of dying from 'Covid' in the *state* of New York, not just the city, and a 0.05 percent chance in Spain, a centre of 'Covid-19' hysteria at one stage. The Stanford studies supported the doctors' data with fatality rate estimates of 0.23 and 0.15 percent. How close are these figures to my estimate of *zero*? Death-rate figures claimed by the World Health Organization at the start of the hoax were some 15 times higher. The California doctors said there was no justification for lockdowns and the economic devastation they caused. Everything they had ever learned about quarantine was that you quarantine the *sick* and not the healthy. They had never seen this before and it made no medical sense.

Why in the in the light of all this would governments and medical systems the world over say that billions must go under house arrest; lose their livelihood; in many cases lose their mind, their health and their life; force people to wear masks dangerous to health and psychology; make human interaction and even family interaction a criminal offence; ban travel; close restaurants, bars, watching live sport, concerts, theatre, and any activity involving human togetherness and discourse; and closing schools to isolate children from their friends and cause many to commit suicide in acts of hopelessness and despair? The California doctors said lockdown consequences included increased child abuse, partner abuse, alcoholism, depression, and other impacts they were seeing every day. Who would do that to the entire human race if not mentally-ill psychopaths of almost unimaginable extremes like Bill Gates? We must face the reality of what we are dealing with and come out of

denial. Fascism and tyranny are made possible only by the target population submitting and acquiescing to fascism and tyranny. The whole of human history shows that to be true. Most people naively and unquestioning believed what they were told about a 'deadly virus' and meekly and weakly submitted to house arrest. Those who didn't believe it – at least in total – still submitted in fear of the consequences of not doing so. For the rest who wouldn't submit draconian fines have been imposed, brutal policing by psychopaths *for* psychopaths, and condemnation from the meek and weak who condemn the Pushbackers on behalf of the very force that has them, too, in its gunsights. 'Pathetic' does not even begin to suffice. Britain's brainless 'Health' Secretary Matt Hancock warned anyone lying to border officials about returning from a list of 'hotspot' countries could face a jail sentence of up to ten years which is more than for racially-aggravated assault, incest and attempting to have sex with a child under 13. Hancock is a lunatic, but he has the state apparatus behind him in a Cult-led chain reaction and the same with UK 'Vaccine Minister' Nadhim Zahawi, a prominent member of the mega-Cult secret society, Le Cercle, which featured in my earlier books. The Cult enforces its will on governments and medical systems; government and medical systems enforce their will on business and police; business enforces its will on staff who enforce it on customers; police enforce the will of the Cult on the population and play their essential part in creating a world of fascist control that their own children and grandchildren will have to live in their entire lives. It is a hierarchical pyramid of imposition and acquiescence and, yes indeedy, of clinical insanity.

Does anyone bright enough to read this book have to ask what the answer is? I think not, but I will reveal it anyway in the fewest of syllables: Tell the psychos and their moronic lackeys to fuck off and let's get on with our lives. We are many – They are few.

CHAPTER SEVEN

War on your mind

One believes things because one has been conditioned to believe them
Aldous Huxley, *Brave New World*

I have described the 'Covid' hoax as a 'Psyop' and that is true in every sense and on every level in accordance with the definition of that term which is psychological warfare. Break down the 'Covid pandemic' to the foundation themes and it is psychological warfare on the human individual and collective mind.

The same can be said for the entire human belief system involving every subject you can imagine. Huxley was right in his contention that people believe what they are conditioned to believe and this comes from the repetition throughout their lives of the same falsehoods. They spew from government, corporations, media and endless streams of 'experts' telling you what the Cult wants you to believe and often believing it themselves (although *far* from always). 'Experts' are rewarded with 'prestigious' jobs and titles and as agents of perceptual programming with regular access to the media. The Cult has to control the narrative – control *information* – or they lose control of the vital, crucial, without-which-they-cannot-prevail public perception of reality. The foundation of that control today is the Internet made possible by the Defense Advanced Research Projects Agency (DARPA), the incredibly sinister technological arm of the Pentagon. The Internet is the result of military technology.

DARPA openly brags about establishing the Internet which has been a long-term project to lasso the minds of the global population. I have said for decades the plan is to control information to such an extreme that eventually no one would see or hear anything that the Cult does not approve. We are closing in on that end with ferocious censorship since the 'Covid' hoax began and in my case it started back in the 1990s in terms of books and speaking venues. I had to create my own publishing company in 1995 precisely because no one else would publish my books even then. I think they're all still running.

Cult Internet

To secure total control of information they needed the Internet in which pre-programmed algorithms can seek out 'unclean' content for deletion and even stop it being posted in the first place. The Cult had to dismantle print and non-Internet broadcast media to ensure the transfer of information to the appropriate-named 'Web' – a critical expression of the *Cult* web. We've seen the ever-quickening demise of traditional media and control of what is left by a tiny number of corporations operating worldwide. Independent journalism in the mainstream is already dead and never was that more obvious than since the turn of 2020. The Cult wants all information communicated via the Internet to globally censor and allow the plug to be pulled any time. Lockdowns and forced isolation has meant that communication between people has been through electronic means and no longer through face-to-face discourse and discussion. Cult psychopaths have targeted the bars, restaurants, sport, venues and meeting places in general for this reason. None of this is by chance and it's to stop people gathering in any kind of privacy or number while being able to track and monitor all Internet communications and block them as necessary. Even private messages between individuals have been censored by these fascists that control Cult fronts like Facebook, Twitter, Google and YouTube which are all officially run by Sabbatian place-people and from the background by higher-level Sabbatian place people.

Facebook, Google, Amazon and their like were seed-funded and supported into existence with money-no-object infusions of funds either directly or indirectly from DARPA and CIA technology arm In-Q-Tel. The Cult plays the long game and prepares very carefully for big plays like 'Covid'. Amazon is another front in the psychological war and pretty much controls the global market in book sales and increasingly publishing. Amazon's limitless funds have deleted fantastic numbers of independent publishers to seize global domination on the way to deciding which books can be sold and circulated and which cannot. Moves in that direction are already happening. Amazon's leading light Jeff Bezos is the grandson of Lawrence Preston Gise who worked with DARPA predecessor ARPA. Amazon has big connections to the CIA and the Pentagon. The plan I have long described went like this:

1. Employ military technology to establish the Internet.

2. Sell the Internet as a place where people can freely communicate without censorship and allow that to happen until the Net becomes the central and irreversible pillar of human society. If the Internet had been highly censored from the start many would have rejected it.

3. Fund and manipulate major corporations into being to control the circulation of information on your Internet using cover stories about geeks in garages to explain how they came about. Give them unlimited funds to expand rapidly with no need to make a profit for years while non-Cult companies who need to balance the books cannot compete. You know that in these circumstances your Googles, YouTubes, Facebooks and Amazons are going to secure near monopolies by either crushing or buying up the opposition.

4. Allow freedom of expression on both the Internet and communication platforms to draw people in until the Internet is the central and irreversible pillar of human society and your communication corporations have reached a stage of near monopoly domination.

5. Then unleash your always-planned frenzy of censorship on the basis of 'where else are you going to go?' and continue to expand that until nothing remains that the Cult does not want its human targets to see.

The process was timed to hit the 'Covid' hoax to ensure the best chance possible of controlling the narrative which they knew they had to do at all costs. They were, after all, about to unleash a 'deadly virus' that didn't really exist. If you do that in an environment of free-flowing information and opinion you would be dead in the

water before you could say Gates is a psychopath. The network was in place through which the Cult-created-and-owned World Health Organization could dictate the 'Covid' narrative and response policy slavishly supported by Cult-owned Internet communication giants and mainstream media while those telling a different story were censored. Google, YouTube, Facebook and Twitter openly announced that they would do this. What else would we expect from Cult-owned operations like Facebook which former executives have confirmed set out to make the platform more addictive than cigarettes and coldly manipulates emotions of its users to sow division between people and groups and scramble the minds of the young? If Zuckerberg lives out the rest of his life without going to jail for crimes against humanity, and most emphatically against the young, it will be a travesty of justice. Still, no matter, cause and effect will catch up with him eventually and the same with Sergey Brin and Larry Page at Google with its CEO Sundar Pichai who fix the Google search results to promote Cult narratives and hide the opposition. Put the same key words into Google and other search engines like DuckDuckGo and you will see how different results can be. Wikipedia is another intensely biased 'encyclopaedia' which skews its content to the Cult agenda. YouTube links to Wikipedia's version of 'Covid' and 'climate change' on video pages in which experts in their field offer a different opinion (even that is increasingly rare with Wojcicki censorship). Into this 'Covid' silence-them network must be added government media censors, sorry 'regulators', such as Ofcom in the UK which imposed tyrannical restrictions on British broadcasters that had the effect of banning me from ever appearing. Just to debate with me about my evidence and views on 'Covid' would mean breaking the fascistic impositions of Ofcom and its CEO career government bureaucrat Melanie Dawes. Gutless British broadcasters tremble at the very thought of fascist Ofcom.

Psychos behind 'Covid'

The reason for the 'Covid' catastrophe in all its facets and forms can be seen by whom and what is driving the policies worldwide in such a coordinated way. Decisions are not being made to protect health, but to target psychology. The dominant group guiding and 'advising' government policy are not medical professionals. They are psychologists and behavioural scientists. Every major country has its own version of this phenomenon and I'll use the British example to show how it works. In many ways the British version has been affecting the wider world in the form of the huge behaviour manipulation network in the UK which operates in other countries. The network involves private companies, government, intelligence and military. The Cabinet Office is at the centre of the government 'Covid' Psyop and part-owns, with 'innovation charity' Nesta, the Behavioural Insights Team (BIT) which claims to be independent of government but patently isn't. The BIT was established in 2010 and its job is to manipulate the psyche of the population to acquiesce to government demands and so much more. It is also known as the 'Nudge Unit', a name inspired by the 2009 book by two ultra-Zionists, Cass Sunstein and Richard Thaler, called *Nudge: Improving Decisions About Health, Wealth, and Happiness*. The book, as with the Behavioural Insights Team, seeks to 'nudge' behaviour (manipulate it) to make the public follow patterns of action and perception that suit those in authority (the Cult). Sunstein is so skilled at this that he advises the World Health Organization and the UK Behavioural Insights Team and was Administrator of the White House Office of Information and Regulatory Affairs in the Obama administration. Biden appointed him to the Department of Homeland Security – another ultra-Zionist in the fold to oversee new immigration laws which is another policy the Cult wants to control. Sunstein is desperate to silence anyone exposing conspiracies and co-authored a 2008 report on the subject in which suggestions were offered to ban 'conspiracy theorizing' or impose 'some kind of tax, financial or otherwise, on those who disseminate such theories'. I guess a psychiatrist's chair is out of the question?

Sunstein's mate Richard Thaler, an 'academic affiliate' of the UK Behavioural Insights Team, is a proponent of 'behavioural economics' which is defined as the study of 'the effects of psychological, cognitive, emotional, cultural and social factors on the decisions of individuals and institutions'. Study the effects so they can be manipulated to be what you want them to be. Other leading names in the development of behavioural economics are ultra-Zionists Daniel Kahneman and Robert J. Shiller and they, with Thaler, won the Nobel Memorial Prize in Economic Sciences for their work in this field. The Behavioural Insights Team is operating at the heart of the UK government and has expanded globally through partnerships with several universities including Harvard, Oxford, Cambridge, University College London (UCL) and Pennsylvania. They claim to have 'trained' (reframed) 20,000 civil servants and run more than 750 projects involving 400 randomised controlled trials in dozens of countries' as another version of mind reframers Common Purpose. BIT works from its office in New York with cities and their agencies, as well as other partners, across the United States and Canada – this is a company part-owned by the British government Cabinet Office. An executive order by President Cult-servant Obama established a US Social and Behavioral Sciences Team in 2015. They all have the same reason for being and that's to brainwash the population directly and by brainwashing those in positions of authority.

'Covid' mind game

Another prime aspect of the UK mind-control network is the 'independent' [joke] Scientific Pandemic Insights Group on Behaviours (SPI-B) which 'provides behavioural science advice aimed at anticipating and helping people adhere to interventions that are recommended by medical or epidemiological experts'. That means manipulating public perception and behaviour to do whatever government tells them to do. It's disgusting and if they really want the public to be 'safe' this lot should all be under lock and key. According to the government website SPI-B consists of

'behavioural scientists, health and social psychologists, anthropologists and historians' and advises the Whitty-Vallance-led Scientific Advisory Group for Emergencies (SAGE) which in turn advises the government on 'the science' (it doesn't) and 'Covid' policy. When politicians say they are being guided by 'the science' this is the rabble in each country they are talking about and that 'science' is dominated by behaviour manipulators to enforce government fascism through public compliance. The Behaviour Insight Team is headed by psychologist David Solomon Halpern, a visiting professor at King's College London, and connects with a national and global web of other civilian and military organisations as the Cult moves towards its goal of fusing them into one fascistic whole in every country through its 'Fusion Doctrine'. The behaviour manipulation network involves, but is not confined to, the Foreign Office; National Security Council; government communications headquarters (GCHQ); MI5; MI6; the Cabinet Office-based Media Monitoring Unit; and the Rapid Response Unit which 'monitors digital trends to spot emerging issues; including misinformation and disinformation; and identifies the best way to respond'.

There is also the 77th Brigade of the UK military which operates like the notorious Israeli military's Unit 8200 in manipulating information and discussion on the Internet by posing as members of the public to promote the narrative and discredit those who challenge it. Here we have the military seeking to manipulate *domestic* public opinion while the Nazis in government are fine with that. Conservative Member of Parliament Tobias Ellwood, an advocate of lockdown and control through 'vaccine passports', is a Lieutenant Colonel reservist in the 77th Brigade which connects with the military operation jHub, the 'innovation centre' for the Ministry of Defence and Strategic Command. jHub has also been involved with the civilian National Health Service (NHS) in 'symptom tracing' the population. The NHS is a key part of this mind control network and produced a document in December, 2020, explaining to staff how to use psychological manipulation with different groups and ages to get them to have the DNA-manipulating 'Covid vaccine'

that's designed to cumulatively rewrite human genetics. The document, called 'Optimising Vaccination Roll Out – Do's and Dont's for all messaging, documents and "communications" in the widest sense', was published by NHS England and the NHS Improvement *Behaviour Change Unit* in partnership with Public Health England and Warwick Business School. I hear the mantra about 'save the NHS' and 'protect the NHS' when we need to scrap the NHS and start again. The current version is far too corrupt, far too anti-human and totally compromised by Cult operatives and their assets. UK government broadcast media censor Ofcom will connect into this web – as will the BBC with its tremendous Ofcom influence – to control what the public see and hear and dictate mass perception. Nuremberg trials must include personnel from all these organisations.

The fear factor

The 'Covid' hoax has led to the creation of the UK Cabinet Office-connected Joint Biosecurity Centre (JBC) which is officially described as providing 'expert advice on pandemics' using its independent [all Cult operations are 'independent'] analytical function to provide real-time analysis about infection outbreaks to identify and respond to outbreaks of Covid-19'. Another role is to advise the government on a response to spikes in infections – 'for example by closing schools or workplaces in local areas where infection levels have risen'. Put another way, promoting the Cult agenda. The Joint Biosecurity Centre is modelled on the Joint Terrorism Analysis Centre which analyses intelligence to set 'terrorism threat levels' and here again you see the fusion of civilian and military operations and intelligence that has led to military intelligence producing documents about 'vaccine hesitancy' and how it can be combated. Domestic civilian matters and opinions should not be the business of the military. The Joint Biosecurity Centre is headed by Tom Hurd, director general of the Office for Security and Counter-Terrorism from the establishment-to-its-fingertips Hurd family. His father is former Foreign Secretary Douglas Hurd. How coincidental that Tom

Hurd went to the elite Eton College and Oxford University with Boris Johnson. Imperial College with its ridiculous computer modeller Neil Ferguson will connect with this gigantic web that will itself interconnect with similar set-ups in other major and not so major countries. Compared with this Cult network the politicians, be they Boris Johnson, Donald Trump or Joe Biden, are bit-part players 'following the science'. The network of psychologists was on the 'Covid' case from the start with the aim of generating maximum fear of the 'virus' to ensure compliance by the population. A government behavioural science group known as SPI-B produced a paper in March, 2020, for discussion by the main government science advisory group known as SAGE. It was headed 'Options for increasing adherence to social distancing measures' and it said the following in a section headed 'Persuasion':

- A substantial number of people still do not feel sufficiently personally threatened; it could be that they are reassured by the low death rate in their demographic group, although levels of concern may be rising. Having a good understanding of the risk has been found to be positively associated with adoption of COVID-19 social distancing measures in Hong Kong.

- The perceived level of personal threat needs to be increased among those who are complacent, using hard-hitting evaluation of options for increasing social distancing emotional messaging. To be effective this must also empower people by making clear the actions they can take to reduce the threat.

- Responsibility to others: There seems to be insufficient understanding of, or feelings of responsibility about, people's role in transmitting the infection to others … Messaging about actions need to be framed positively in terms of protecting oneself and the community, and increase confidence that they will be effective.

- Some people will be more persuaded by appeals to play by the rules, some by duty to the community, and some to personal risk.

> All these different approaches are needed. The messaging also needs to take account of the realities of different people's lives. Messaging needs to take account of the different motivational levers and circumstances of different people.

All this could be achieved the SPI-B psychologists said by *using the media to increase the sense of personal threat* which translates as terrify the shit out of the population, including children, so they all do what we want. That's not happened has it? Those excuses for 'journalists' who wouldn't know journalism if it bit them on the arse (the great majority) have played their crucial part in serving this Cult-government Psyop to enslave their own kids and grandkids. How they live with themselves I have no idea. The psychological war has been underpinned by constant government 'Covid' propaganda in almost every television and radio ad break, plus the Internet and print media, which has pounded out the fear with taxpayers footing the bill for their own programming. The result has been people terrified of a 'virus' that doesn't exist or one with a tiny fatality rate even if you believe it does. People walk down the street and around the shops wearing face-nappies damaging their health and psychology while others report those who refuse to be that naïve to the police who turn up in their own face-nappies. I had a cameraman come to my flat and he was so frightened of 'Covid' he came in wearing a mask and refused to shake my hand in case he caught something. He had – naïveitis – and the thought that he worked in the mainstream media was both depressing and made his behaviour perfectly explainable. The fear which has gripped the minds of so many and frozen them into compliance has been carefully cultivated by these psychologists who are really psychopaths. If lives get destroyed and a lot of young people commit suicide it shows our plan is working. SPI-B then turned to compulsion on the public to comply. 'With adequate preparation, rapid change can be achieved', it said. Some countries had introduced mandatory self-isolation on a wide scale without evidence of major public unrest and a large majority of the UK's population appeared to be supportive of more coercive measures with 64 percent of adults saying they would

support putting London under a lockdown (watch the 'polls' which are designed to make people believe that public opinion is in favour or against whatever the subject in hand).

For 'aggressive protective measures' to be effective, the SPI-B paper said, special attention should be devoted to those population groups that are more at risk. Translated from the Orwellian this means making the rest of population feel guilty for not protecting the 'vulnerable' such as old people which the Cult and its agencies were about to kill on an industrial scale with lockdown, lack of treatment and the Gates 'vaccine'. Psychopath psychologists sold their guilt-trip so comprehensively that Los Angeles County Supervisor Hilda Solis reported that children were apologising (from a distance) to their parents and grandparents for bringing 'Covid' into their homes and getting them sick. '… These apologies are just some of the last words that loved ones will ever hear as they die alone,' she said. Gut-wrenchingly Solis then used this childhood tragedy to tell children to stay at home and 'keep your loved ones alive'. Imagine heaping such potentially life-long guilt on a kid when it has absolutely nothing to do with them. These people are deeply disturbed and the psychologists behind this even more so.

Uncivil war – divide and rule

Professional mind-controllers at SPI-B wanted the media to increase a sense of responsibility to others (do as you're told) and promote 'positive messaging' for those actions while in contrast to invoke 'social disapproval' by the unquestioning, obedient, community of anyone with a mind of their own. Again the compliant Goebbels-like media obliged. This is an old, old, trick employed by tyrannies the world over throughout human history. You get the target population to keep the target population in line – *your* line. SPI-B said this could 'play an important role in preventing anti-social behaviour or discouraging failure to enact pro-social behaviour'. For 'anti-social' in the Orwellian parlance of SPI-B see any behaviour that government doesn't approve. SPI-B recommendations said that 'social disapproval' should be accompanied by clear messaging and

promotion of strong collective identity – hence the government and celebrity mantra of 'we're all in this together'. Sure we are. The mind doctors have such contempt for their targets that they think some clueless comedian, actor or singer telling them to do what the government wants will be enough to win them over. We have had UK comedian Lenny Henry, actor Michael Caine and singer Elton John wheeled out to serve the propagandists by urging people to have the DNA-manipulating 'Covid' non-'vaccine'. The role of Henry and fellow black celebrities in seeking to coax a 'vaccine' reluctant black community into doing the government's will was especially stomach-turning. An emotion-manipulating script and carefully edited video featuring these black 'celebs' was such an insult to the intelligence of black people and where's the self-respect of those involved selling their souls to a fascist government agenda? Henry said he heard black people's 'legitimate worries and concerns', but people must 'trust the facts' when they were doing exactly that by not having the 'vaccine'. They had to include the obligatory reference to Black Lives Matter with the line … 'Don't let coronavirus cost even more black lives – because we matter'. My god, it was pathetic. 'I know the vaccine is safe and what it does.' How? 'I'm a comedian and it says so in my script.'

SPI-B said social disapproval needed to be carefully managed to avoid victimisation, scapegoating and misdirected criticism, but they knew that their 'recommendations' would lead to exactly that and the media were specifically used to stir-up the divide-and-conquer hostility. Those who conform like good little baa, baas, are praised while those who have seen through the tidal wave of lies are 'Covidiots'. The awake have been abused by the fast asleep for not conforming to fascism and impositions that the awake know are designed to endanger their health, dehumanise them, and tear asunder the very fabric of human society. We have had the curtain-twitchers and morons reporting neighbours and others to the face-nappied police for breaking 'Covid rules' with fascist police delighting in posting links and phone numbers where this could be done. The Cult cannot impose its will without a compliant police

and military or a compliant population willing to play their part in enslaving themselves and their kids. The words of a pastor in Nazi Germany are so appropriate today:

First they came for the socialists and I did not speak out because I was not a socialist.

Then they came for the trade unionists and I did not speak out because I was not a trade unionist.

Then they came for the Jews and I did not speak out because I was not a Jew.

Then they came for me and there was no one left to speak for me.

Those who don't learn from history are destined to repeat it and so many are.

'Covid' rules: Rewiring the mind

With the background laid out to this gigantic national and global web of psychological manipulation we can put 'Covid' rules into a clear and sinister perspective. Forget the claims about protecting health. 'Covid' rules are about dismantling the human mind, breaking the human spirit, destroying self-respect, and then putting Humpty Dumpty together again as a servile, submissive slave. Social isolation through lockdown and distancing have devastating effects on the human psyche as the psychological psychopaths well know and that's the real reason for them. Humans need contact with each other, discourse, closeness and touch, or they eventually, and literarily, go crazy. Masks, which I will address at some length, fundamentally add to the effects of isolation and the Cult agenda to dehumanise and de-individualise the population. To do this while knowing – in fact *seeking* – this outcome is the very epitome of evil and psychologists involved in this *are* the epitome of evil. They must like all the rest of the Cult demons and their assets stand trial for crimes against humanity on a scale that defies the imagination. Psychopaths in uniform use isolation to break enemy troops and agents and make them subservient and submissive to tell what they know. The technique is rightly considered a form of torture and

torture is most certainly what has been imposed on the human population.

Clinically-insane American psychologist Harry Harlow became famous for his isolation experiments in the 1950s in which he separated baby monkeys from their mothers and imprisoned them for months on end in a metal container or 'pit of despair'. They soon began to show mental distress and depression as any idiot could have predicted. Harlow put other monkeys in steel chambers for three, six or twelve months while denying them any contact with animals or humans. He said that the effects of total social isolation for six months were 'so devastating and debilitating that we had assumed initially that twelve months of isolation would not produce any additional decrement'; but twelve months of isolation 'almost obliterated the animals socially'. This is what the Cult and its psychopaths are doing to you and your children. Even monkeys in partial isolation in which they were not allowed to form relationships with other monkeys became 'aggressive and hostile, not only to others, but also towards their own bodies'. We have seen this in the young as a consequence of lockdown. UK government psychopaths launched a public relations campaign telling people not to hug each other even after they received the 'Covid-19 vaccine' which we were told with more lies would allow a return to 'normal life'. A government source told *The Telegraph*: 'It will be along the lines that it is great that you have been vaccinated, but if you are going to visit your family and hug your grandchildren there is a chance you are going to infect people you love.' The source was apparently speaking from a secure psychiatric facility. Janet Lord, director of Birmingham University's Institute of Inflammation and Ageing, said that parents and grandparents should avoid hugging their children. Well, how can I put it, Ms Lord? Fuck off. Yep, that'll do.

Destroying the kids – where are the parents?

Observe what has happened to people enslaved and isolated by lockdown as suicide and self-harm has soared worldwide,

particularly among the young denied the freedom to associate with their friends. A study of 49,000 people in English-speaking countries concluded that almost half of young adults are at clinical risk of mental health disorders. A national survey in America of 1,000 currently enrolled high school and college students found that 5 percent reported attempting suicide during the pandemic. Data from the US CDC's National Syndromic Surveillance Program from January 1st to October 17th, 2020, revealed a *31 percent* increase in mental health issues among adolescents aged 12 to 17 compared with 2019. The CDC reported that America in general suffered the biggest drop in life expectancy since World War Two as it fell by a year in the first half of 2020 as a result of 'deaths of despair' – overdoses and suicides. Deaths of despair have leapt by more than 20 percent during lockdown and include the highest number of fatal overdoses ever recorded in a single year – 81,000. Internet addiction is another consequence of being isolated at home which lowers interest in physical activities as kids fall into inertia and what's the point? Children and young people are losing hope and giving up on life, sometimes literally. A 14-year-old boy killed himself in Maryland because he had 'given up' when his school district didn't reopen; an 11-year-old boy shot himself during a zoom class; a teenager in Maine succumbed to the isolation of the 'pandemic' when he ended his life after experiencing a disrupted senior year at school. Children as young as nine have taken their life and all these stories can be repeated around the world. Careers are being destroyed before they start and that includes those in sport in which promising youngsters have not been able to take part. The plan of the psycho-psychologists is working all right. Researchers at Cambridge University found that lockdowns cause significant harm to children's mental health. Their study was published in the *Archives of Disease in Childhood*, and followed 168 children aged between 7 and 11. The researchers concluded:

> During the UK lockdown, children's depression symptoms have increased substantially, relative to before lockdown. The scale of this effect has direct relevance for the continuation of different elements of lockdown policy, such as complete or partial school closures …

… Specifically, we observed a statistically significant increase in ratings of depression, with a medium-to-large effect size. Our findings emphasise the need to incorporate the potential impact of lockdown on child mental health in planning the ongoing response to the global pandemic and the recovery from it.

Not a chance when the Cult's psycho-psychologists were getting exactly what they wanted. The UK's Royal College of Paediatrics and Child Health has urged parents to look for signs of eating disorders in children and young people after a three to four fold increase. Specialists say the 'pandemic' is a major reason behind the rise. You don't say. The College said isolation from friends during school closures, exam cancellations, loss of extra-curricular activities like sport, and an increased use of social media were all contributory factors along with fears about the virus (psycho-psychologists again), family finances, and students being forced to quarantine. Doctors said young people were becoming severely ill by the time they were seen with 'Covid' regulations reducing face-to-face consultations. Nor is it only the young that have been devastated by the psychopaths. Like all bullies and cowards the Cult is targeting the young, elderly, weak and infirm. A typical story was told by a British lady called Lynn Parker who was not allowed to visit her husband in 2020 for the last ten and half months of his life 'when he needed me most' between March 20th and when he died on December 19th. This vacates the criminal and enters the territory of evil. The emotional impact on the immune system alone is immense as are the number of people of all ages worldwide who have died as a result of Cult-demanded, Gates-demanded, lockdowns.

Isolation is torture

The experience of imposing solitary confinement on millions of prisoners around the world has shown how a large percentage become 'actively psychotic and/or acutely suicidal'. Social isolation has been found to trigger 'a specific psychiatric syndrome, characterized by hallucinations; panic attacks; overt paranoia; diminished impulse control; hypersensitivity to external stimuli; and difficulties with thinking, concentration and memory'. Juan Mendez,

a United Nations rapporteur (investigator), said that isolation is a form of torture. Research has shown that even after isolation prisoners find it far more difficult to make social connections and I remember chatting to a shop assistant after one lockdown who told me that when her young son met another child again he had no idea how to act or what to do. Hannah Flanagan, Director of Emergency Services at Journey Mental Health Center in Dane County, Wisconsin, said: 'The specificity about Covid social distancing and isolation that we've come across as contributing factors to the suicides are really new to us this year.' But they are not new to those that devised them. They are getting the effect they want as the population is psychologically dismantled to be rebuilt in a totally different way. Children and the young are particularly targeted. They will be the adults when the full-on fascist AI-controlled technocracy is planned to be imposed and they are being prepared to meekly submit. At the same time older people who still have a memory of what life was like before – and how fascist the new normal really is – are being deleted. You are going to see efforts to turn the young against the old to support this geriatric genocide. Hannah Flanagan said the big increase in suicide in her county proved that social isolation is not only harmful, but deadly. Studies have shown that isolation from others is one of the main risk factors in suicide and even more so with women. Warnings that lockdown could create a 'perfect storm' for suicide were ignored. After all this was one of the *reasons* for lockdown. Suicide, however, is only the most extreme of isolation consequences. There are many others. Dr Dhruv Khullar, assistant professor of healthcare policy at Weill Cornell Medical College, said in a *New York Times* article in 2016 long before the fake 'pandemic':

> A wave of new research suggests social separation is bad for us. Individuals with less social connection have disrupted sleep patterns, altered immune systems, more inflammation and higher levels of stress hormones. One recent study found that isolation increases the risk of heart disease by 29 percent and stroke by 32 percent. Another analysis that pooled data from 70 studies and 3.4 million people found that socially isolated individuals had a 30 percent higher risk of dying in the next seven years, and that this effect was largest in middle age.

Loneliness can accelerate cognitive decline in older adults, and isolated individuals are twice as likely to die prematurely as those with more robust social interactions. These effects start early: Socially isolated children have significantly poorer health 20 years later, even after controlling for other factors. All told, loneliness is as important a risk factor for early death as obesity and smoking.

There you have proof from that one article alone four years before 2020 that those who have enforced lockdown, social distancing and isolation knew what the effect would be and that is even more so with professional psychologists that have been driving the policy across the globe. We can go back even further to the years 2000 and 2003 and the start of a major study on the effects of isolation on health by Dr Janine Gronewold and Professor Dirk M. Hermann at the University Hospital in Essen, Germany, who analysed data on 4,316 people with an average age of 59 who were recruited for the long-term research project. They found that socially isolated people are more than 40 percent more likely to have a heart attack, stroke, or other major cardiovascular event and nearly 50 percent more likely to die from any cause. Given the financial Armageddon unleashed by lockdown we should note that the study found a relationship between increased cardiovascular risk and lack of financial support. After excluding other factors social isolation was still connected to a 44 percent increased risk of cardiovascular problems and a 47 percent increased risk of death by any cause. Lack of financial support was associated with a 30 percent increase in the risk of cardiovascular health events. Dr Gronewold said it had been known for some time that feeling lonely or lacking contact with close friends and family can have an impact on physical health and the study had shown that having strong social relationships is of high importance for heart health. Gronewold said they didn't understand yet why people who are socially isolated have such poor health outcomes, but this was obviously a worrying finding, particularly during these times of prolonged social distancing. Well, it can be explained on many levels. You only have to identify the point in the body where people feel loneliness and missing people they are parted from – it's in the centre of the chest where they feel the ache of loneliness and the ache of missing people. 'My heart aches for

you' … 'My heart aches for some company.' I will explain this more in the chapter Escaping Wetiko, but when you realise that the body is the mind – they are expressions of each other – the reason why state of the mind dictates state of the body becomes clear.

American psychologist Ranjit Powar was highlighting the effects of lockdown isolation as early as April, 2020. She said humans have evolved to be social creatures and are wired to live in interactive groups. Being isolated from family, friends and colleagues could be unbalancing and traumatic for most people and could result in short or even long-term psychological and physical health problems. An increase in levels of anxiety, aggression, depression, forgetfulness and hallucinations were possible psychological effects of isolation. 'Mental conditions may be precipitated for those with underlying pre-existing susceptibilities and show up in many others without any pre-condition.' Powar said personal relationships helped us cope with stress and if we lost this outlet for letting off steam the result can be a big emotional void which, for an average person, was difficult to deal with. 'Just a few days of isolation can cause increased levels of anxiety and depression' – so what the hell has been the effect on the global population of *18 months* of this at the time of writing? Powar said: 'Add to it the looming threat of a dreadful disease being repeatedly hammered in through the media and you have a recipe for many shades of mental and physical distress.' For those with a house and a garden it is easy to forget that billions have had to endure lockdown isolation in tiny overcrowded flats and apartments with nowhere to go outside. The psychological and physical consequences of this are unimaginable and with lunatic and abusive partners and parents the consequences have led to tremendous increases in domestic and child abuse and alcoholism as people seek to shut out the horror. Ranjit Powar said:

Staying in a confined space with family is not all a rosy picture for everyone. It can be extremely oppressive and claustrophobic for large low-income families huddled together in small single-room houses. Children here are not lucky enough to have many board/electronic games or books to keep them occupied.

Add to it the deep insecurity of running out of funds for food and basic necessities. On the other hand, there are people with dysfunctional family dynamics, such as domineering, abusive or alcoholic partners, siblings or parents which makes staying home a period of trial. Incidence of suicide and physical abuse against women has shown a worldwide increase. Heightened anxiety and depression also affect a person's immune system, making them more susceptible to illness.

To think that Powar's article was published on April 11th, 2020.

Six-feet fantasy

Social (unsocial) distancing demanded that people stay six feet or two metres apart. UK government advisor Robert Dingwall from the New and Emerging Respiratory Virus Threats Advisory Group said in a radio interview that the two-metre rule was 'conjured up out of nowhere' and was not based on science. No, it was not based on *medical* science, but it didn't come out of nowhere. The distance related to *psychological* science. Six feet/two metres was adopted in many countries and we were told by people like the criminal Anthony Fauci and his ilk that it was founded on science. Many schools could not reopen because they did not have the space for six-feet distancing. Then in March, 2021, after a year of six-feet 'science', a study published in the *Journal of Infectious Diseases* involving more than 500,000 students and almost 100,000 staff over 16 weeks revealed no significant difference in 'Covid' cases between six feet and three feet and Fauci changed his tune. Now three feet was okay. There is no difference between six feet and three *inches* when there is no 'virus' and they got away with six feet for psychological reasons for as long as they could. I hear journalists and others talk about 'unintended consequences' of lockdown. They are not *unintended* at all; they have been coldly-calculated for a specific outcome of human control and that's why super-psychopaths like Gates have called for them so vehemently. Super-psychopath psychologists have demanded them and psychopathic or clueless, spineless, politicians have gone along with them by 'following the science'. But it's not science at all. 'Science' is not what is; it's only what people can be manipulated to believe it is. The whole 'Covid' catastrophe is

founded on mind control. Three word or three statement mantras issued by the UK government are a well-known mind control technique and so we've had 'Stay home/protect the NHS/save lives', 'Stay alert/control the virus/save lives' and 'hands/face/space'. One of the most vocal proponents of extreme 'Covid' rules in the UK has been Professor Susan Michie, a member of the British Communist Party, who is not a medical professional. Michie is the director of the Centre for Behaviour Change at University College London. She is a *behavioural psychologist* and another filthy rich 'Marxist' who praised China's draconian lockdown. She was known by fellow students at Oxford University as 'Stalin's nanny' for her extreme Marxism. Michie is an influential member of the UK government's Scientific Advisory Group for Emergencies (SAGE) and behavioural manipulation groups which have dominated 'Covid' policy. She is a consultant adviser to the World Health Organization on 'Covid-19' and behaviour. Why the hell are lockdowns anything to do with her when they are claimed to be about health? Why does a behavioural psychologist from a group charged with changing the behaviour of the public want lockdown, human isolation and mandatory masks? Does that question really need an answer? Michie *absolutely* has to explain herself before a Nuremberg court when humanity takes back its world again and even more so when you see the consequences of masks that she demands are compulsory. This is a Michie classic:

> The benefits of getting primary school children to wear masks is that regardless of what little degree of transmission is occurring in those age groups it could help normalise the practice. Young children wearing masks may be more likely to get their families to accept masks.

Those words alone should carry a prison sentence when you ponder on the callous disregard for children involved and what a statement it makes about the mind and motivations of Susan Michie. What a lovely lady and what she said there encapsulates the mentality of the psychopaths behind the 'Covid' horror. Let us compare what Michie said with a countrywide study in Germany published at researchsquare.com involving 25,000 school children and 17,854 health complaints submitted by parents. Researchers

found that masks are harming children physically, psychologically, and behaviourally with 24 health issues associated with mask wearing. They include: shortness of breath (29.7%); dizziness (26.4%); increased headaches (53%); difficulty concentrating (50%); drowsiness or fatigue (37%); and malaise (42%). Nearly a third of children experienced more sleep issues than before and a quarter developed new fears. Researchers found health issues and other impairments in 68 percent of masked children covering their faces for an average of 4.5 hours a day. Hundreds of those taking part experienced accelerated respiration, tightness in the chest, weakness, and short-term impairment of consciousness. A reminder of what Michie said again:

The benefits of getting primary school children to wear masks is that regardless of what little degree of transmission is occurring in those age groups it could help normalise the practice. Young children wearing masks may be more likely to get their families to accept masks.

Psychopaths in government and psychology now have children and young people – plus all the adults – wearing masks for hours on end while clueless teachers impose the will of the psychopaths on the young they should be protecting. What the hell are parents doing?

Cult lab rats

We have some schools already imposing on students microchipped buzzers that activate when they get 'too close' to their pals in the way they do with lab rats. How apt. To the Cult and its brain-dead servants our children *are* lab rats being conditioned to be unquestioning, dehumanised slaves for the rest of their lives. Children and young people are being weaned and frightened away from the most natural human instincts including closeness and touch. I have tracked in the books over the years how schools were banning pupils from greeting each other with a hug and the whole Cult-induced Me Too movement has terrified men and boys from a relaxed and natural interaction with female friends and work colleagues to the point where many men try never to be in a room

alone with a woman that's not their partner. Airhead celebrities have as always played their virtue-signalling part in making this happen with their gross exaggeration. For every monster like Harvey Weinstein there are at least tens of thousands of men that don't treat women like that; but everyone must be branded the same and policy changed for them as well as the monster. I am going to be using the word 'dehumanise' many times in this chapter because that is what the Cult is seeking to do and it goes very deep as we shall see. Don't let them kid you that social distancing is planned to end one day. That's not the idea. We are seeing more governments and companies funding and producing wearable gadgets to keep people apart and they would not be doing that if this was meant to be short-term. A tech start-up company backed by GCHQ, the British Intelligence and military surveillance headquarters, has created a social distancing wrist sensor that alerts people when they get too close to others. The CIA has also supported tech companies developing similar devices. The wearable sensor was developed by Tended, one of a number of start-up companies supported by GCHQ (see the CIA and DARPA). The device can be worn on the wrist or as a tag on the waistband and will vibrate whenever someone wearing the device breaches social distancing and gets anywhere near natural human contact. The company had a lucky break in that it was developing a distancing sensor when the 'Covid' hoax arrived which immediately provided a potentially enormous market. How fortunate. The government in big-time Cult-controlled Ontario in Canada is investing $2.5 million in wearable contact tracing technology that 'will alert users if they may have been exposed to the Covid-19 in the workplace and will beep or vibrate if they are within six feet of another person'. Facedrive Inc., the technology company behind this, was founded in 2016 with funding from the Ontario Together Fund and obviously they, too, had a prophet on the board of directors. The human surveillance and control technology is called TraceSCAN and would be worn by the human cyborgs in places such as airports, workplaces, construction sites, care homes and … *schools*.

I emphasise schools with children and young people the prime targets. You know what is planned for society as a whole if you keep your eyes on the schools. They have always been places where the state program the next generation of slaves to be its compliant worker-ants – or Woker-ants these days; but in the mist of the 'Covid' madness they have been transformed into mind laboratories on a scale never seen before. Teachers and head teachers are just as programmed as the kids – often more so. Children are kept apart from human interaction by walk lanes, classroom distancing, staggered meal times, masks, and the rolling-out of buzzer systems. Schools are now physically laid out as a laboratory maze for lab-rats. Lunatics at a school in Anchorage, Alaska, who should be prosecuted for child abuse, took away desks and forced children to kneel (know your place) on a mat for five hours a day while wearing a mask and using their chairs as a desk. How this was supposed to impact on a 'virus' only these clinically insane people can tell you and even then it would be clap-trap. The school banned recess (interaction), art classes (creativity), and physical exercise (getting body and mind moving out of inertia). Everyone behind this outrage should be in jail or better still a mental institution. The behavioural manipulators are all for this dystopian approach to schools. Professor Susan Michie, the mind-doctor and British Communist Party member, said it was wrong to say that schools were safe. They had to be made so by 'distancing', masks and ventilation (sitting all day in the cold). I must ask this lady round for dinner on a night I know I am going to be out and not back for weeks. She probably wouldn't be able to make it, anyway, with all the visits to her own psychologist she must have block-booked.

Masking identity

I know how shocking it must be for you that a behaviour manipulator like Michie wants everyone to wear masks which have long been a feature of mind-control programs like the infamous MKUltra in the United States, but, there we are. We live and learn. I spent many years from 1996 to right across the millennium

researching mind control in detail on both sides of the Atlantic and elsewhere. I met a large number of mind-control survivors and many had been held captive in body and mind by MKUltra. MK stands for mind-control, but employs the German spelling in deference to the Nazis spirited out of Germany at the end of World War Two by Operation Paperclip in which the US authorities, with help from the Vatican, transported Nazi mind-controllers and engineers to America to continue their work. Many of them were behind the creation of NASA and they included Nazi scientist and SS officer Wernher von Braun who swapped designing V-2 rockets to bombard London with designing the Saturn V rockets that powered the NASA moon programme's Apollo craft. I think I may have mentioned that the Cult has no borders. Among Paperclip escapees was Josef Mengele, the Angel of Death in the Nazi concentration camps where he conducted mind and genetic experiments on children often using twins to provide a control twin to measure the impact of his 'work' on the other. If you want to observe the Cult mentality in all its extremes of evil then look into the life of Mengele. I have met many people who suffered mercilessly under Mengele in the United States where he operated under the name Dr Greene and became a stalwart of MKUltra programming and torture. Among his locations was the underground facility in the Mojave Desert in California called the China Lake Naval Weapons Station which is almost entirely below the surface. My books *The Biggest Secret*, *Children of the Matrix* and *The Perception Deception* have the detailed background to MKUltra.

The best-known MKUltra survivor is American Cathy O'Brien. I first met her and her late partner Mark Phillips at a conference in Colorado in 1996. Mark helped her escape and deprogram from decades of captivity in an offshoot of MKUltra known as Project Monarch in which 'sex slaves' were provided for the rich and famous including Father George Bush, Dick Cheney and the Clintons. Read Cathy and Mark's book *Trance-Formation of America* and if you are new to this you will be shocked to the core. I read it in 1996 shortly before, with the usual synchronicity of my life, I found

myself given a book table at the conference right next to hers. MKUltra never ended despite being very publicly exposed (only a small part of it) in the 1970s and continues in other guises. I am still in touch with Cathy. She contacted me during 2020 after masks became compulsory in many countries to tell me how they were used as part of MKUltra programming. I had been observing 'Covid regulations' and the relationship between authority and public for months. I saw techniques that I knew were employed on individuals in MKUltra being used on the global population. I had read many books and manuals on mind control including one called *Silent Weapons for Quiet Wars* which came to light in the 1980s and was a guide on how to perceptually program on a mass scale. 'Silent Weapons' refers to mind-control. I remembered a line from the manual as governments, medical authorities and law enforcement agencies have so obviously talked to – or rather at – the adult population since the 'Covid' hoax began as if they are children. The document said:

> If a person is spoken to by a T.V. advertiser as if he were a twelve-year-old, then, due to suggestibility, he will, with a certain probability, respond or react to that suggestion with the uncritical response of a twelve-year-old and will reach in to his economic reservoir and deliver its energy to buy that product on impulse when he passes it in the store.

That's why authority has spoken to adults like children since all this began.

Why did Michael Jackson wear masks?

Every aspect of the 'Covid' narrative has mind-control as its central theme. Cathy O'Brien wrote an article for davidicke.com about the connection between masks and mind control. Her daughter Kelly who I first met in the 1990s was born while Cathy was still held captive in MKUltra. Kelly was forced to wear a mask as part of her programming from the age of *two* to dehumanise her, target her sense of individuality and reduce the amount of oxygen her brain and body received. *Bingo*. This is the real reason for compulsory

masks, why they have been enforced en masse, and why they seek to increase the number they demand you wear. First one, then two, with one disgraceful alleged 'doctor' recommending four which is nothing less than a death sentence. Where and how often they must be worn is being expanded for the purpose of mass mind control and damaging respiratory health which they can call 'Covid-19'. Canada's government headed by the man-child Justin Trudeau, says it's fine for children of two and older to wear masks. An insane 'study' in Italy involving just 47 children concluded there was no problem for babies as young as *four months* wearing them. Even after people were 'vaccinated' they were still told to wear masks by the criminal that is Anthony Fauci. Cathy wrote that mandating masks is allowing the authorities literally to control the air we breathe which is what was done in MKUltra. You might recall how the singer Michael Jackson wore masks and there is a reason for that. He was subjected to MKUltra mind control through Project Monarch and his psyche was scrambled by these simpletons. Cathy wrote:

In MKUltra Project Monarch mind control, Michael Jackson had to wear a mask to silence his voice so he could not reach out for help. Remember how he developed that whisper voice when he wasn't singing? Masks control the mind from the outside in, like the redefining of words is doing. By controlling what we can and cannot say for fear of being labeled racist or beaten, for example, it ultimately controls thought that drives our words and ultimately actions (or lack thereof).

Likewise, a mask muffles our speech so that we are not heard, which controls voice … words … mind. This is Mind Control. Masks are an obvious mind control device, and I am disturbed so many people are complying on a global scale. Masks depersonalize while making a person feel as though they have no voice. It is a barrier to others. People who would never choose to comply but are forced to wear a mask in order to keep their job, and ultimately their family fed, are compromised. They often feel shame and are subdued. People have stopped talking with each other while media controls the narrative.

The 'no voice' theme has often become literal with train passengers told not to speak to each other in case they pass on the 'virus', singing banned for the same reason and bonkers California officials telling people riding roller coasters that they cannot shout and scream. Cathy said she heard every day from healed MKUltra survivors who cannot wear a mask without flashing back on ways

their breathing was controlled – 'from ball gags and penises to water boarding'. She said that through the years when she saw images of people in China wearing masks 'due to pollution' that it was really to control their oxygen levels. 'I knew it was as much of a population control mechanism of depersonalisation as are burkas', she said. Masks are another Chinese communist/fascist method of control that has been swept across the West as the West becomes China at lightning speed since we entered 2020.

Mask-19

There are other reasons for mandatory masks and these include destroying respiratory health to call it 'Covid-19' and stunting brain development of children and the young. Dr Margarite Griesz-Brisson MD, PhD, is a Consultant Neurologist and Neurophysiologist and the Founder and Medical Director of the London Neurology and Pain Clinic. Her CV goes down the street and round the corner. She is clearly someone who cares about people and won't parrot the propaganda. Griesz-Brisson has a PhD in pharmacology, with special interest in neurotoxicology, environmental medicine, neuroregeneration and neuroplasticity (the way the brain can change in the light of information received). She went public in October, 2020, with a passionate warning about the effects of mask-wearing laws:

> The reinhalation of our exhaled air will without a doubt create oxygen deficiency and a flooding of carbon dioxide. We know that the human brain is very sensitive to oxygen deprivation. There are nerve cells for example in the hippocampus that can't be longer than 3 minutes without oxygen – they cannot survive. The acute warning symptoms are headaches, drowsiness, dizziness, issues in concentration, slowing down of reaction time – reactions of the cognitive system.

Oh, I know, let's tell bus, truck and taxi drivers to wear them and people working machinery. How about pilots, doctors and police? Griesz-Brisson makes the important point that while the symptoms she mentions may fade as the body readjusts this does not alter the fact that people continue to operate in oxygen deficit with long list of

potential consequences. She said it was well known that neurodegenerative diseases take years or decades to develop. 'If today you forget your phone number, the breakdown in your brain would have already started 20 or 30 years ago.' She said degenerative processes in your brain are getting amplified as your oxygen deprivation continues through wearing a mask. Nerve cells in the brain are unable to divide themselves normally in these circumstances and lost nerve cells will no longer be regenerated. 'What is gone is gone.' Now consider that people like shop workers and *schoolchildren* are wearing masks for hours every day. What in the name of sanity is going to be happening to them? 'I do not wear a mask, I need my brain to think', Griesz-Brisson said, 'I want to have a clear head when I deal with my patients and not be in a carbon dioxide-induced anaesthesia'. If you are told to wear a mask anywhere ask the organisation, police, store, whatever, for their risk assessment on the dangers and negative effects on mind and body of enforcing mask-wearing. They won't have one because it has never been done not even by government. All of them must be subject to class-action lawsuits as the consequences come to light. They don't do mask risk assessments for an obvious reason. They know what the conclusions would be and independent scientific studies that *have* been done tell a horror story of consequences.

'Masks are criminal'

Dr Griesz-Brisson said that for children and adolescents, masks are an absolute no-no. They had an extremely active and adaptive immune system and their brain was incredibly active with so much to learn. 'The child's brain, or the youth's brain, is thirsting for oxygen.' The more metabolically active an organ was, the more oxygen it required; and in children and adolescents every organ was metabolically active. Griesz-Brisson said that to deprive a child's or adolescent's brain of oxygen, or to restrict it in any way, was not only dangerous to their health, it was absolutely criminal. 'Oxygen deficiency inhibits the development of the brain, and the damage that has taken place as a result CANNOT be reversed.' Mind

manipulators of MKUltra put masks on two-year-olds they wanted to neurologically rewire and you can see why. Griesz-Brisson said a child needs the brain to learn and the brain needs oxygen to function. 'We don't need a clinical study for that. This is simple, indisputable physiology.' Consciously and purposely induced oxygen deficiency was an absolutely deliberate health hazard, and an absolute medical contraindication which means that 'this drug, this therapy, this method or measure should not be used, and is not allowed to be used'. To coerce an entire population to use an absolute medical contraindication by force, she said, there had to be definite and serious reasons and the reasons must be presented to competent interdisciplinary and independent bodies to be verified and authorised. She had this warning of the consequences that were coming if mask wearing continued:

When, in ten years, dementia is going to increase exponentially, and the younger generations couldn't reach their god-given potential, it won't help to say 'we didn't need the masks'. I know how damaging oxygen deprivation is for the brain, cardiologists know how damaging it is for the heart, pulmonologists know how damaging it is for the lungs. Oxygen deprivation damages every single organ. Where are our health departments, our health insurance, our medical associations? It would have been their duty to be vehemently against the lockdown and to stop it and stop it from the very beginning.

Why do the medical boards issue punishments to doctors who give people exemptions? Does the person or the doctor seriously have to prove that oxygen deprivation harms people? What kind of medicine are our doctors and medical associations representing? Who is responsible for this crime? The ones who want to enforce it? The ones who let it happen and play along, or the ones who don't prevent it?

All of the organisations and people she mentions there either answer directly to the Cult or do whatever hierarchical levels above them tell them to do. The outcome of both is the same. 'It's not about masks, it's not about viruses, it's certainly not about your health', Griesz-Brisson said. 'It is about much, much more. I am not participating. I am not afraid.' They were taking our air to breathe and there was no unfounded medical exemption from face masks. Oxygen deprivation was dangerous for every single brain. It had to be the free decision of every human being whether they want to

wear a mask that was absolutely ineffective to protect themselves from a virus. She ended by rightly identifying where the responsibility lies for all this:

> The imperative of the hour is personal responsibility. We are responsible for what we think, not the media. We are responsible for what we do, not our superiors. We are responsible for our health, not the World Health Organization. And we are responsible for what happens in our country, not the government.

Halle-bloody-lujah.

But surgeons wear masks, right?

Independent studies of mask-wearing have produced a long list of reports detailing mental, emotional and physical dangers. What a definition of insanity to see police officers imposing mask-wearing on the public which will cumulatively damage their health while the police themselves wear masks that will cumulatively damage *their* health. It's utter madness and both public and police do this because 'the government says so' – yes a government of brain-donor idiots like UK Health Secretary Matt Hancock reading the 'follow the science' scripts of psychopathic, lunatic psychologists. The response you get from Stockholm syndrome sufferers defending the very authorities that are destroying them and their families is that 'surgeons wear masks'. This is considered the game, set and match that they must work and don't cause oxygen deficit. Well, actually, scientific studies have shown that they *do* and oxygen levels are monitored in operating theatres to compensate. Surgeons wear masks to stop spittle and such like dropping into open wounds – not to stop 'viral particles' which are so miniscule they can only be seen through an electron microscope. Holes in the masks are significantly bigger than 'viral particles' and if you sneeze or cough they will breach the mask. I watched an incredibly disingenuous 'experiment' that claimed to prove that masks work in catching 'virus' material from the mouth and nose. They did this with a slow motion camera and the mask did block big stuff which stayed inside the mask and

against the face to be breathed in or cause infections on the face as we have seen with many children. 'Viral particles', however, would never have been picked up by the camera as they came through the mask when they are far too small to be seen. The 'experiment' was therefore disingenuous *and* useless.

Studies have concluded that wearing masks in operating theatres (and thus elsewhere) make no difference to preventing infection while the opposite is true with toxic shite building up in the mask and this had led to an explosion in tooth decay and gum disease dubbed by dentists 'mask mouth'. You might have seen the Internet video of a furious American doctor urging people to take off their masks after a four-year-old patient had been rushed to hospital the night before and nearly died with a lung infection that doctors sourced to mask wearing. A study in the journal *Cancer Discovery* found that inhalation of harmful microbes can contribute to advanced stage lung cancer in adults and long-term use of masks can help breed dangerous pathogens. Microbiologists have said frequent mask wearing creates a moist environment in which microbes can grow and proliferate before entering the lungs. The Canadian Agency for Drugs and Technologies in Health, or CADTH, a Canadian national organisation that provides research and analysis to healthcare decision-makers, said this as long ago as 2013 in a report entitled 'Use of Surgical Masks in the Operating Room: A Review of the Clinical Effectiveness and Guidelines'. It said:

- No evidence was found to support the use of surgical face masks to reduce the frequency of surgical site infections
- No evidence was found on the effectiveness of wearing surgical face masks to protect staff from infectious material in the operating room.
- Guidelines recommend the use of surgical face masks by staff in the operating room to protect both operating room staff and patients (despite the lack of evidence).

We were told that the world could go back to 'normal' with the arrival of the 'vaccines'. When they came, fraudulent as they are, the story changed as I knew that it would. We are in the midst of transforming 'normal', not going back to it. Mary Ramsay, head of immunisation at Public Health England, echoed the words of US criminal Anthony Fauci who said masks and other regulations must stay no matter if people are vaccinated. The Fauci idiot continued to wear two masks – different colours so both could be clearly seen – after he *claimed* to have been vaccinated. Senator Rand Paul told Fauci in one exchange that his double-masks were 'theatre' and he was right. It's all theatre. Mary Ramsay back-tracked on the vaccine-return-to-normal theme when she said the public may need to wear masks and social-distance for years despite the jabs. 'People have got used to those lower-level restrictions now, and [they] can live with them', she said telling us what the idea has been all along. 'The vaccine does not give you a pass, even if you have had it, you must continue to follow all the guidelines' said a Public Health England statement which reneged on what we had been told before and made having the 'vaccine' irrelevant to 'normality' even by the official story. Spain's fascist government trumped everyone by passing a law mandating the wearing of masks on the beach and even when swimming in the sea. The move would have devastated what's left of the Spanish tourist industry, posed potential breathing dangers to swimmers and had Northern European sunbathers walking around with their forehead brown and the rest of their face white as a sheet. The ruling was so crazy that it had to be retracted after pressure from public and tourist industry, but it confirmed where the Cult wants to go with masks and how clinically insane authority has become. The determination to make masks permanent and hide the serious dangers to body and mind can be seen in the censorship of scientist Professor Denis Rancourt by Bill Gates-funded academic publishing website ResearchGate over his papers exposing the dangers and uselessness of masks. Rancourt said:

ResearchGate today has permanently locked my account, which I have had since 2015. Their reasons graphically show the nature of their attack against democracy, and their corruption of

science … By their obscene non-logic, a scientific review of science articles reporting on harms caused by face masks has a 'potential to cause harm'. No criticism of the psychological device (face masks) is tolerated, if the said criticism shows potential to influence public policy.

This is what happens in a fascist world.

Where are the 'greens' (again)?

Other dangers of wearing masks especially regularly relate to the inhalation of minute plastic fibres into the lungs and the deluge of discarded masks in the environment and oceans. Estimates predicted that more than 1.5 billion disposable masks will end up in the world's oceans every year polluting the water with tons of plastic and endangering marine wildlife. Studies project that humans are using 129 billion face masks each month worldwide – about three million a minute. Most are disposable and made from plastic, non-biodegradable microfibers that break down into smaller plastic particles that become widespread in ecosystems. They are littering cities, clogging sewage channels and turning up in bodies of water. I have written in other books about the immense amounts of microplastics from endless sources now being absorbed into the body. Rolf Halden, director of the Arizona State University (ASU) Biodesign Center for Environmental Health Engineering, was the senior researcher in a 2020 study that analysed 47 human tissue samples and found microplastics in all of them. 'We have detected these chemicals of plastics in every single organ that we have investigated', he said. I wrote in *The Answer* about the world being deluged with microplastics. A study by the Worldwide Fund for Nature (WWF) found that people are consuming on average every week some 2,000 tiny pieces of plastic mostly through water and also through marine life and the air. Every year humans are ingesting enough microplastics to fill a heaped dinner plate and in a life-time of 79 years it is enough to fill two large waste bins. Marco Lambertini, WWF International director general said: 'Not only are plastics polluting our oceans and waterways and killing marine life – it's in all of us and we can't escape consuming plastics,' American

geologists found tiny plastic fibres, beads and shards in rainwater samples collected from the remote slopes of the Rocky Mountain National Park near Denver, Colorado. Their report was headed: 'It is raining plastic.' Rachel Adams, senior lecturer in Biomedical Science at Cardiff Metropolitan University, said that among health consequences are internal inflammation and immune responses to a 'foreign body'. She further pointed out that microplastics become carriers of toxins including mercury, pesticides and dioxins (a known cause of cancer and reproductive and developmental problems). These toxins accumulate in the fatty tissues once they enter the body through microplastics. Now this is being compounded massively by people putting plastic on their face and throwing it away.

Workers exposed to polypropylene plastic fibres known as 'flock' have developed 'flock worker's lung' from inhaling small pieces of the flock fibres which can damage lung tissue, reduce breathing capacity and exacerbate other respiratory problems. *Now* … commonly used surgical masks have three layers of melt-blown textiles made of … polypropylene. We have billions of people putting these microplastics against their mouth, nose and face for hours at a time day after day in the form of masks. How does anyone think that will work out? I mean – what could possibly go wrong? We posted a number of scientific studies on this at davidicke.com, but when I went back to them as I was writing this book the links to the science research website where they were hosted were dead. Anything that challenges the official narrative in any way is either censored or vilified. The official narrative is so unsupportable by the evidence that only deleting the truth can protect it. A study by Chinese scientists still survived – with the usual twist which it why it was still active, I guess. Yes, they found that virtually all the masks they tested increased the daily intake of microplastic fibres, but people should still wear them because the danger from the 'virus' was worse said the crazy 'team' from the Institute of Hydrobiology in Wuhan. Scientists first discovered microplastics in lung tissue of some patients who died of lung cancer

in the 1990s. Subsequent studies have confirmed the potential health damage with the plastic degrading slowly and remaining in the lungs to accumulate in volume. Wuhan researchers used a machine simulating human breathing to establish that masks shed up to nearly 4,000 microplastic fibres in a month with reused masks producing more. Scientists said some masks are laced with toxic chemicals and a variety of compounds seriously restricted for both health and environmental reasons. They include cobalt (used in blue dye) and formaldehyde known to cause watery eyes, burning sensations in the eyes, nose, and throat, plus coughing, wheezing and nausea. No – that must be 'Covid-19'.

Mask 'worms'

There is another and potentially even more sinister content of masks. Mostly new masks of different makes filmed under a microscope around the world have been found to contain strange black fibres or 'worms' that appear to move or 'crawl' by themselves and react to heat and water. The nearest I have seen to them are the self-replicating fibres that are pulled out through the skin of those suffering from Morgellons disease which has been connected to the phenomena of 'chemtrails' which I will bring into the story later on. Morgellons fibres continue to grow outside the body and have a form of artificial intelligence. Black 'worm' fibres in masks have that kind of feel to them and there is a nanotechnology technique called 'worm micelles' which carry and release drugs or anything else you want to deliver to the body. For sure the suppression of humanity by mind altering drugs is the Cult agenda big time and the more excuses they can find to gain access to the body the more opportunities there are to make that happen whether through 'vaccines' or masks pushed against the mouth and nose for hours on end.

So let us summarise the pros and cons of masks:

Against masks: Breathing in your own carbon dioxide; depriving the body and brain of sufficient oxygen; build-up of toxins in the mask that can be breathed into the lungs and cause rashes on the face and 'mask-mouth'; breathing microplastic fibres and toxic chemicals into the lungs; dehumanisation and deleting individualisation by literally making people faceless; destroying human emotional interaction through facial expression and deleting parental connection with their babies which look for guidance to their facial expression.

For masks: They don't protect you from a 'virus' that doesn't exist and even if it did 'viral' particles are so minute they are smaller than the holes in the mask.

Governments, police, supermarkets, businesses, transport companies, and all the rest who seek to impose masks have done no risk assessment on their consequences for health and psychology and are now open to group lawsuits when the impact becomes clear with a cumulative epidemic of respiratory and other disease. Authorities will try to exploit these effects and hide the real cause by dubbing them 'Covid-19'. Can you imagine setting out to force the population to wear health-destroying masks without doing any assessment of the risks? It is criminal and it is evil, but then how many people targeted in this way, who see their children told to wear them all day at school, have asked for a risk assessment? Billions can't be imposed upon by the few unless the billions allow it. Oh, yes, with just a tinge of irony, 85 percent of all masks made worldwide come from *China*.

Wash your hands in toxic shite

'Covid' rules include the use of toxic sanitisers and again the health consequences of constantly applying toxins to be absorbed through the skin is obvious to any level of Renegade Mind. America's Food and Drug Administration (FDA) said that sanitisers are drugs and issued a warning about 75 dangerous brands which contain

methanol used in antifreeze and can cause death, kidney damage and blindness. The FDA circulated the following warning even for those brands that it claims to be safe:

Store hand sanitizer out of the reach of pets and children, and children should use it only with adult supervision. Do not drink hand sanitizer. This is particularly important for young children, especially toddlers, who may be attracted by the pleasant smell or brightly colored bottles of hand sanitizer.

Drinking even a small amount of hand sanitizer can cause alcohol poisoning in children. (However, there is no need to be concerned if your children eat with or lick their hands after using hand sanitizer.) During this coronavirus pandemic, poison control centers have had an increase in calls about accidental ingestion of hand sanitizer, so it is important that adults monitor young children's use.

Do not allow pets to swallow hand sanitizer. If you think your pet has eaten something potentially dangerous, call your veterinarian or a pet poison control center right away. Hand sanitizer is flammable and should be stored away from heat and flames. When using hand sanitizer, rub your hands until they feel completely dry before performing activities that may involve heat, sparks, static electricity, or open flames.

There you go, perfectly safe, then, and that's without even a mention of the toxins absorbed through the skin. Come on kids – sanitise your hands everywhere you go. It will save you from the 'virus'. Put all these elements together of the 'Covid' normal and see how much health and psychology is being cumulatively damaged, even devastated, to 'protect your health'. Makes sense, right? They are only imposing these things because they care, right? *Right?*

Submitting to insanity

Psychological reframing of the population goes very deep and is done in many less obvious ways. I hear people say how contradictory and crazy 'Covid' rules are and how they are ever changing. This is explained away by dismissing those involved as idiots. It is a big mistake. The Cult is delighted if its cold calculation is perceived as incompetence and idiocy when it is anything but. Oh, yes, there are idiots within the system – lots of them – but they are *administering* the Cult agenda, mostly unknowingly. They are not deciding and dictating it. The bulwark against tyranny is self-

respect, always has been, always will be. It is self-respect that has broken every tyranny in history. By its very nature self-respect will not bow to oppression and its perpetrators. There is so little self-respect that it's always the few that overturn dictators. Many may eventually follow, but the few with the iron spines (self-respect) kick it off and generate the momentum. The Cult targets self-respect in the knowledge that once this has gone only submission remains. Crazy, contradictory, ever-changing 'Covid' rules are systematically applied by psychologists to delete self-respect. They *want* you to see that the rules make no sense. It is one thing to decide to do something when *you* have made the choice based on evidence and logic. You still retain your self-respect. It is quite another when you can see what you are being told to do is insane, ridiculous and makes no sense, and *yet you still do it*. Your self-respect is extinguished and this has been happening as ever more obviously stupid and nonsensical things have been demanded and the great majority have complied even when they can see they are stupid and nonsensical.

People walk around in face-nappies knowing they are damaging their health and make no difference to a 'virus'. They do it in fear of not doing it. I know it's daft, but I'll do it anyway. When that happens something dies inside of you and submissive reframing has begun. Next there's a need to hide from yourself that you have conceded your self-respect and you convince yourself that you have not really submitted to fear and intimidation. You begin to believe that you are complying with craziness because it's the right thing to do. When first you concede your self-respect of 2+2 = 4 to 2+2 = 5 you *know* you are compromising your self-respect. Gradually to avoid facing that fact you begin to *believe* that 2+2=5. You have been reframed and I have been watching this process happening in the human psyche on an industrial scale. The Cult is working to break your spirit and one of its major tools in that war is humiliation. I read how former American soldier Bradley Manning (later Chelsea Manning after a sex-change) was treated after being jailed for supplying WikiLeaks with documents exposing the enormity of

government and elite mendacity. Manning was isolated in solitary confinement for eight months, put under 24-hour surveillance, forced to hand over clothing before going to bed, and stand naked for every roll call. This is systematic humiliation. The introduction of anal swab 'Covid' tests in China has been done for the same reason to delete self-respect and induce compliant submission. Anal swabs are mandatory for incoming passengers in parts of China and American diplomats have said they were forced to undergo the indignity which would have been calculated humiliation by the Cult-owned Chinese government that has America in its sights.

Government-people: An abusive relationship

Spirit-breaking psychological techniques include giving people hope and apparent respite from tyranny only to take it away again. This happened in the UK during Christmas, 2020, when the psycho-psychologists and their political lackeys announced an easing of restrictions over the holiday only to reimpose them almost immediately on the basis of yet another lie. There is a big psychological difference between getting used to oppression and being given hope of relief only to have that dashed. Psychologists know this and we have seen the technique used repeatedly. Then there is traumatising people before you introduce more extreme regulations that require compliance. A perfect case was the announcement by the dark and sinister Whitty and Vallance in the UK that 'new data' predicted that 4,000 could die every day over the winter of 2020/2021 if we did not lockdown again. I think they call it lying and after traumatising people with that claim out came Jackboot Johnson the next day with new curbs on human freedom. Psychologists know that a frightened and traumatised mind becomes suggestable to submission and behaviour reframing. Underpinning all this has been to make people fearful and suspicious of each other and see themselves as a potential danger to others. In league with deleted self-respect you have the perfect psychological recipe for self-loathing. The relationship between authority and public is now demonstrably the same as that of

subservience to an abusive partner. These are signs of an abusive relationship explained by psychologist Leslie Becker-Phelps:

Psychological and emotional abuse: Undermining a partner's self-worth with verbal attacks, name-calling, and belittling. Humiliating the partner in public, unjustly accusing them of having an affair, or interrogating them about their every behavior. Keeping partner confused or off balance by saying they were just kidding or blaming the partner for 'making' them act this way … Feigning in public that they care while turning against them in private. This leads to victims frequently feeling confused, incompetent, unworthy, hopeless, and chronically self-doubting. [Apply these techniques to how governments have treated the population since New Year, 2020, and the parallels are obvious.]

Physical abuse: The abuser might physically harm their partner in a range of ways, such as grabbing, hitting, punching, or shoving them. They might throw objects at them or harm them with a weapon. [Observe the physical harm imposed by masks, lockdown, and so on.]

Threats and intimidation: One way abusers keep their partners in line is by instilling fear. They might be verbally threatening, or give threatening looks or gestures. Abusers often make it known that they are tracking their partner's every move. They might destroy their partner's possessions, threaten to harm them, or threaten to harm their family members. Not surprisingly, victims of this abuse often feel anxiety, fear, and panic. [No words necessary.]

Isolation: Abusers often limit their partner's activities, forbidding them to talk or interact with friends or family. They might limit access to a car or even turn off their phone. All of this might be done by physically holding them against their will, but is often accomplished through psychological abuse and intimidation. The more isolated a person feels, the fewer resources they have to help gain perspective on their situation and to escape from it. [No words necessary.]

Economic abuse: Abusers often make their partners beholden to them for money by controlling access to funds of any kind. They might prevent their partner from getting a job or withhold access to money they earn from a job. This creates financial dependency that makes leaving the relationship very difficult. [See destruction of livelihoods and the proposed meagre 'guaranteed income' so long as you do whatever you are told.]

Using children: An abuser might disparage their partner's parenting skills, tell their children lies about their partner, threaten to take custody of their children, or threaten to harm their children. These tactics instil fear and often elicit compliance. [See reframed social service mafia and how children are being mercilessly abused by the state over 'Covid' while their parents look on too frightened to do anything.]

A further recurring trait in an abusive relationship is the abused blaming themselves for their abuse and making excuses for the abuser. We have the public blaming each other for lockdown abuse by government and many making excuses for the government while attacking those who challenge the government. How often we have heard authorities say that rules are being imposed or reimposed only because people have refused to 'behave' and follow the rules. We don't want to do it – it's *you*.

Renegade Minds are an antidote to all of these things. They will never concede their self-respect no matter what the circumstances. Even when apparent humiliation is heaped upon them they laugh in its face and reflect back the humiliation on the abuser where it belongs. Renegade Minds will never wear masks they know are only imposed to humiliate, suppress and damage both physically and psychologically. Consequences will take care of themselves and they will never break their spirit or cause them to concede to tyranny. UK newspaper columnist Peter Hitchens was one of the few in the mainstream media to speak out against lockdowns and forced vaccinations. He then announced he had taken the jab. He wanted to see family members abroad and he believed vaccine passports were inevitable even though they had not yet been introduced. Hitchens

has a questioning and critical mind, but not a Renegade one. If he had no amount of pressure would have made him concede. Hitchens excused his action by saying that the battle has been lost. Renegade Minds never accept defeat when freedom is at stake and even if they are the last one standing the self-respect of not submitting to tyranny is more important than any outcome or any consequence.

That's why Renegade Minds are the only minds that ever changed anything worth changing.

CHAPTER EIGHT

'Reframing' insanity

Insanity is relative. It depends on who has who locked in what cage
Ray Bradbury

'Reframing' a mind means simply to change its perception and behaviour. This can be done subconsciously to such an extent that subjects have no idea they have been 'reframed' while to any observer changes in behaviour and attitudes are obvious.

Human society is being reframed on a ginormous scale since the start of 2020 and here we have the reason why psychologists rather than doctors have been calling the shots. Ask most people who have succumbed to 'Covid' reframing if they have changed and most will say 'no'; but they *have* and fundamentally. The Cult's long-game has been preparing for these times since way back and crucial to that has been to prepare both population and officialdom mentally and emotionally. To use the mind-control parlance they had to reframe the population with a mentality that would submit to fascism and reframe those in government and law enforcement to impose fascism or at least go along with it. The result has been the fact-deleted mindlessness of 'Wokeness' and officialdom that has either enthusiastically or unquestioningly imposed global tyranny demanded by reframed politicians on behalf of psychopathic and deeply evil cultists. 'Cognitive reframing' identifies and challenges the way someone sees the world in the form of situations, experiences and emotions and then restructures those perceptions to view the same set of circumstances in a different way. This can have

benefits if the attitudes are personally destructive while on the other side it has the potential for individual and collective mind control which the subject has no idea has even happened.

Cognitive therapy was developed in the 1960s by Aaron T. Beck who was born in Rhode Island in 1921 as the son of Jewish immigrants from the Ukraine. He became interested in the techniques as a treatment for depression. Beck's daughter Judith S. Beck is prominent in the same field and they founded the Beck Institute for Cognitive Behavior Therapy in Philadelphia in 1994. Cognitive reframing, however, began to be used worldwide by those with a very dark agenda. The Cult reframes politicians to change their attitudes and actions until they are completely at odds with what they once appeared to stand for. The same has been happening to government administrators at all levels, law enforcement, military and the human population. Cultists love mind control for two main reasons: It allows them to control what people think, do and say to secure agenda advancement and, by definition, it calms their legendary insecurity and fear of the unexpected. I have studied mind control since the time I travelled America in 1996. I may have been talking to next to no one in terms of an audience in those years, but my goodness did I gather a phenomenal amount of information and knowledge about so many things including the techniques of mind control. I have described this in detail in other books going back to *The Biggest Secret* in 1998. I met a very large number of people recovering from MKUltra and its offshoots and successors and I began to see how these same techniques were being used on the population in general. This was never more obvious than since the 'Covid' hoax began.

Reframing the enforcers

I have observed over the last two decades and more the very clear transformation in the dynamic between the police, officialdom and the public. I tracked this in the books as the relationship mutated from one of serving the public to seeing them as almost the enemy and certainly a lower caste. There has always been a class divide

based on income and always been some psychopathic, corrupt, and big-I-am police officers. This was different. Wholesale change was unfolding in the collective dynamic; it was less about money and far more about position and perceived power. An us-and-them was emerging. Noses were lifted skyward by government administration and law enforcement and their attitude to the public they were *supposed* to be serving changed to one of increasing contempt, superiority and control. The transformation was so clear and widespread that it had to be planned. Collective attitudes and dynamics do not change naturally and organically that quickly on that scale. I then came across an organisation in Britain called Common Purpose created in the late 1980s by Julia Middleton who would work in the office of Deputy Prime Minister John Prescott during the long and disastrous premiership of war criminal Tony Blair. When Blair speaks the Cult is speaking and the man should have been in jail a long time ago. Common Purpose proclaims itself to be one of the biggest 'leadership development' organisations in the world while functioning as a *charity* with all the financial benefits which come from that. It hosts 'leadership development' courses and programmes all over the world and claims to have 'brought together' what it calls 'leaders' from more than 100 countries on six continents. The modus operandi of Common Purpose can be compared with the work of the UK government's reframing network that includes the Behavioural Insights Team 'nudge unit' and 'Covid' reframing specialists at SPI-B. WikiLeaks described Common Purpose long ago as 'a hidden virus in our government and schools' which is unknown to the general public: 'It recruits and trains "leaders" to be loyal to the directives of Common Purpose and the EU, instead of to their own departments, which they then undermine or subvert, the NHS [National Health Service] being an example.' This is a vital point to understand the 'Covid' hoax. The NHS, and its equivalent around the world, has been utterly reframed in terms of administrators and much of the medical personnel with the transformation underpinned by recruitment policies. The outcome has been the criminal and psychopathic behaviour of the

NHS over 'Covid' and we have seen the same in every other major country. WikiLeaks said Common Purpose trainees are 'learning to rule without regard to democracy' and to usher in a police state (current events explained). Common Purpose operated like a 'glue' and had members in the NHS, BBC, police, legal profession, church, many of Britain's 7,000 quangos, local councils, the Civil Service, government ministries and Parliament, and controlled many RDA's (Regional Development Agencies). Here we have one answer for how and why British institutions and their like in other countries have changed so negatively in relation to the public. This further explains how and why the beyond-disgraceful reframed BBC has become a propaganda arm of 'Covid' fascism. They are all part of a network pursuing the same goal.

By 2019 Common Purpose was quoting a figure of 85,000 'leaders' that had attended its programmes. These 'students' of all ages are known as Common Purpose 'graduates' and they consist of government, state and local government officials and administrators, police chiefs and officers, and a whole range of others operating within the national, local and global establishment. Cressida Dick, Commissioner of the London Metropolitan Police, is the Common Purpose graduate who was the 'Gold Commander' that oversaw what can only be described as the murder of Brazilian electrician Jean Charles de Menezes in 2005. He was held down by psychopathic police and shot seven times in the head by a psychopathic lunatic after being mistaken for a terrorist when he was just a bloke going about his day. Dick authorised officers to pursue and keep surveillance on de Menezes and ordered that he be stopped from entering the underground train system. Police psychopaths took her at her word clearly. She was 'disciplined' for this outrage by being *promoted* – eventually to the top of the 'Met' police where she has been a disaster. Many Chief Constables controlling the police in different parts of the UK are and have been Common Purpose graduates. I have heard the 'graduate' network described as a sort of Mafia or secret society operating within the fabric of government at all levels pursuing a collective policy

ingrained at Common Purpose training events. Founder Julia Middleton herself has said:

> Locally and internationally, Common Purpose graduates will be 'lighting small fires' to create change in their organisations and communities … The Common Purpose effect is best illustrated by the many stories of small changes brought about by leaders, who themselves have changed.

A Common Purpose mission statement declared:

> Common Purpose aims to improve the way society works by expanding the vision, decision-making ability and influence of all kinds of leaders. The organisation runs a variety of educational programmes for leaders of all ages, backgrounds and sectors, in order to provide them with the inspirational, information and opportunities they need to change the world.

Yes, but into what? Since 2020 the answer has become clear.

NLP and the Delphi technique

Common Purpose would seem to be a perfect name or would common programming be better? One of the foundation methods of reaching 'consensus' (group think) is by setting the agenda theme and then encouraging, cajoling or pressuring everyone to agree a 'consensus' in line with the core theme promoted by Common Purpose. The methodology involves the 'Delphi technique', or an adaption of it, in which opinions are expressed that are summarised by a 'facilitator or change agent' at each stage. Participants are 'encouraged' to modify their views in the light of what others have said. Stage by stage the former individual opinions are merged into group consensus which just happens to be what Common Purpose wants them to believe. A key part of this is to marginalise anyone refusing to concede to group think and turn the group against them to apply pressure to conform. We are seeing this very technique used on the general population to make 'Covid' group-thinkers hostile to those who have seen through the bullshit. People can be reframed by using perception manipulation methods such as Neuro-Linguistic Programming (NLP) in which you change perception with the use of

carefully constructed language. An NLP website described the technique this way:

… A method of influencing brain behaviour (the 'neuro' part of the phrase) through the use of language (the 'linguistic' part) and other types of communication to enable a person to 'recode' the way the brain responds to stimuli (that's the 'programming') and manifest new and better behaviours. Neuro-Linguistic Programming often incorporates hypnosis and self-hypnosis to help achieve the change (or 'programming') that is wanted.

British alternative media operation UKColumn has done very detailed research into Common Purpose over a long period. I quoted co-founder and former naval officer Brian Gerrish in my book *Remember Who You Are*, published in 2011, as saying the following years before current times:

It is interesting that many of the mothers who have had children taken by the State speak of the Social Services people being icily cool, emotionless and, as two ladies said in slightly different words, '… like little robots'. We know that NLP is cumulative, so people can be given small imperceptible doses of NLP in a course here, another in a few months, next year etc. In this way, major changes are accrued in their personality, but the day by day change is almost unnoticeable.

In these and other ways 'graduates' have had their perceptions uniformly reframed and they return to their roles in the institutions of government, law enforcement, legal profession, military, 'education', the UK National Health Service and the whole swathe of the establishment structure to pursue a common agenda preparing for the 'post-industrial', 'post-democratic' society. I say 'preparing' but we are now there. 'Post-industrial' is code for the Great Reset and 'post-democratic' is 'Covid' fascism. UKColumn has spoken to partners of those who have attended Common Purpose 'training'. They have described how personalities and attitudes of 'graduates' changed very noticeably for the worse by the time they had completed the course. They had been 'reframed' and told they are the 'leaders' – the special ones – who know better than the population. There has also been the very demonstrable recruitment of psychopaths and narcissists into government administration at all

levels and law enforcement. If you want psychopathy hire psychopaths and you get a simple cause and effect. If you want administrators, police officers and 'leaders' to perceive the public as lesser beings who don't matter then employ narcissists. These personalities are identified using 'psychometrics' that identifies knowledge, abilities, attitudes and personality traits, mostly through carefully-designed questionnaires and tests. As this policy has passed through the decades we have had power-crazy, power-trippers appointed into law enforcement, security and government administration in preparation for current times and the dynamic between public and law enforcement/officialdom has been transformed. UKColumn's Brian Gerrish said of the narcissistic personality:

> Their love of themselves and power automatically means that they will crush others who get in their way. I received a major piece of the puzzle when a friend pointed out that when they made public officials re-apply for their own jobs several years ago they were also required to do psychometric tests. This was undoubtedly the start of the screening process to get 'their' sort of people in post.

How obvious that has been since 2020 although it was clear what was happening long before if people paid attention to the changing public-establishment dynamic.

Change agents

At the centre of events in 'Covid' Britain is the National Health Service (NHS) which has behaved disgracefully in slavishly following the Cult agenda. The NHS management structure is awash with Common Purpose graduates or 'change agents' working to a common cause. Helen Bevan, a Chief of Service Transformation at the NHS Institute for Innovation and Improvement, co-authored a document called 'Towards a million change agents, a review of the social movements literature: implications for large scale change in the NHS'. The document compared a project management approach to that of change and social movements where 'people change

themselves and each other – peer to peer'. Two definitions given for a 'social movement' were:

A group of people who consciously attempt to build a radically new social order; involves people of a broad range of social backgrounds; and deploys politically confrontational and socially disruptive tactics – Cyrus Zirakzadeh 1997

Collective challenges, based on common purposes and social solidarities, in sustained interaction with elites, opponents, and authorities – Sidney Tarrow 1994

Helen Bevan wrote another NHS document in which she defined 'framing' as 'the process by which leaders construct, articulate and put across their message in a powerful and compelling way in order to win people to their cause and call them to action'. I think I could come up with another definition that would be rather more accurate. The National Health Service and institutions of Britain and the wider world have been taken over by reframed 'change agents' and that includes everything from the United Nations to national governments, local councils and social services which have been kidnapping children from loving parents on an extraordinary and gathering scale on the road to the end of parenthood altogether. Children from loving homes are stolen and kidnapped by the state and put into the 'care' (inversion) of the local authority through council homes, foster parents and forced adoption. At the same time children are allowed to be abused without response while many are under council 'care'. UKColumn highlighted the Common Purpose connection between South Yorkshire Police and Rotherham council officers in the case of the scandal in that area of the sexual exploitation of children to which the authorities turned not one blind eye, but both:

We were alarmed to discover that the Chief Executive, the Strategic Director of Children and Young People's Services, the Manager for the Local Strategic Partnership, the Community Cohesion Manager, the Cabinet Member for Cohesion, the Chief Constable and his predecessor had all attended Leadership training courses provided by the pseudo-charity Common Purpose.

Once 'change agents' have secured positions of hire and fire within any organisation things start to move very quickly. Personnel are then hired and fired on the basis of whether they will work towards the agenda the change agent represents. If they do they are rapidly promoted even though they may be incompetent. Those more qualified and skilled who are pre-Common Purpose 'old school' see their careers stall and even disappear. This has been happening for decades in every institution of state, police, 'health' and social services and all of them have been transformed as a result in their attitudes to their jobs and the public. Medical professions, including nursing, which were once vocations for the caring now employ many cold, callous and couldn't give a shit personality types. The UKColumn investigation concluded:

By blurring the boundaries between people, professions, public and private sectors, responsibility and accountability, Common Purpose encourages 'graduates' to believe that as new selected leaders, they can work together, outside of the established political and social structures, to achieve a paradigm shift or CHANGE – so called 'Leading Beyond Authority'. In doing so, the allegiance of the individual becomes 'reframed' on CP colleagues and their NETWORK.

Reframing the Face-Nappies

Nowhere has this process been more obvious than in the police where recruitment of psychopaths and development of unquestioning mind-controlled group-thinkers have transformed law enforcement into a politically-correct 'Woke' joke and a travesty of what should be public service. Today they wear their face-nappies like good little gofers and enforce 'Covid' rules which are fascism under another name. Alongside the specifically-recruited psychopaths we have software minds incapable of free thought. Brian Gerrish again:

An example is the policeman who would not get on a bike for a press photo because he had not done the cycling proficiency course. Normal people say this is political correctness gone mad. Nothing could be further from the truth. The policeman has been reframed, and in his reality it is perfect common sense not to get on the bike 'because he hasn't done the cycling course'.

Another example of this is where the police would not rescue a boy from a pond until they had taken advice from above on the 'risk assessment'. A normal person would have arrived, perhaps thought of the risk for a moment, and dived in. To the police now 'reframed', they followed 'normal' procedure.

There are shocking cases of reframed ambulance crews doing the same. Sheer unthinking stupidity of London Face-Nappies headed by Common Purpose graduate Cressida Dick can be seen in their behaviour at a vigil in March, 2021, for a murdered woman, Sarah Everard. A police officer had been charged with the crime. Anyone with a brain would have left the vigil alone in the circumstances. Instead they 'manhandled' women to stop them breaking 'Covid rules' to betray classic reframing. Minds in the thrall of perception control have no capacity for seeing a situation on its merits and acting accordingly. 'Rules is rules' is their only mind-set. My father used to say that rules and regulations are for the guidance of the intelligent and the blind obedience of the idiot. Most of the intelligent, decent, coppers have gone leaving only the other kind and a few old school for whom the job must be a daily nightmare. The combination of psychopaths and rule-book software minds has been clearly on public display in the 'Covid' era with automaton robots in uniform imposing fascistic 'Covid' regulations on the population without any personal initiative or judging situations on their merits. There are thousands of examples around the world, but I'll make my point with the infamous Derbyshire police in the English East Midlands – the ones who think pouring dye into beauty spots and using drones to track people walking in the countryside away from anyone is called 'policing'. To them there are rules decreed by the government which they have to enforce and in their bewildered state a group gathering in a closed space and someone walking alone in the countryside are the same thing. It is beyond idiocy and enters the realm of clinical insanity.

Police officers in Derbyshire said they were 'horrified' – *horrified* – to find 15 to 20 'irresponsible' kids playing a football match at a closed leisure centre 'in breach of coronavirus restrictions'. When they saw the police the kids ran away leaving their belongings behind and the reframed men and women of Derbyshire police were seeking to establish their identities with a view to fining their parents. The most natural thing for youngsters to do – kicking a ball about – is turned into a criminal activity and enforced by the moronic software programs of Derbyshire police. You find the same mentality in every country. These barely conscious 'horrified' officers said they had to take action because 'we need to ensure these rules are being followed' and 'it is of the utmost importance that you ensure your children are following the rules and regulations for Covid-19'. Had any of them done ten seconds of research to see if this parroting of their masters' script could be supported by any evidence? Nope. Reframed people don't think – others think for them and that's the whole idea of reframing. I have seen police officers one after the other repeating without question word for word what officialdom tells them just as I have seen great swathes of the public doing the same. Ask either for 'their' opinion and out spews what they have been told to think by the official narrative. Police and public may seem to be in different groups, but their mentality is the same. Most people do whatever they are told in fear not doing so or because they believe what officialdom tells them; almost the entirety of the police do what they are told for the same reason. Ultimately it's the tiny inner core of the global Cult that's telling both what to do.

So Derbyshire police were 'horrified'. Oh, really? Why did they think those kids were playing football? It was to relieve the psychological consequences of lockdown and being denied human contact with their friends and interaction, touch and discourse vital to human psychological health. Being denied this month after month has dismantled the psyche of many children and young people as depression and suicide have exploded. Were Derbyshire police *horrified by that*? Are you kidding? Reframed people don't have those

mental and emotional processes that can see how the impact on the psychological health of youngsters is far more dangerous than any 'virus' even if you take the mendacious official figures to be true. The reframed are told (programmed) how to act and so they do. The Derbyshire Chief Constable in the first period of lockdown when the black dye and drones nonsense was going on was Peter Goodman. He was the man who severed the connection between his force and the Derbyshire Constabulary *Male Voice* Choir when he decided that it was not inclusive enough to allow women to join. The fact it was a male voice choir making a particular sound produced by male voices seemed to elude a guy who terrifyingly ran policing in Derbyshire. He retired weeks after his force was condemned as disgraceful by former Supreme Court Justice Jonathan Sumption for their behaviour over extreme lockdown impositions. Goodman was replaced by his deputy Rachel Swann who was in charge when her officers were 'horrified'. The police statement over the boys committing the hanging-offence of playing football included the line about the youngsters being 'irresponsible in the times we are all living through' missing the point that the real relevance of the 'times we are all living through' is the imposition of fascism enforced by psychopaths and reframed minds of police officers playing such a vital part in establishing the fascist tyranny that their own children and grandchildren will have to live in their entire lives. As a definition of insanity that is hard to beat although it might be run close by imposing masks on people that can have a serious effect on their health while wearing a face nappy all day themselves. Once again public and police do it for the same reason – the authorities tell them to and who are they to have the self-respect to say no?

Wokers in uniform

How reframed do you have to be to arrest a *six-year-old* and take him to court for *picking a flower* while waiting for a bus? Brain dead police and officialdom did just that in North Carolina where criminal proceedings happen regularly for children under nine. Attorney Julie Boyer gave the six-year-old crayons and a colouring book

during the 'flower' hearing while the 'adults' decided his fate. County Chief District Court Judge Jay Corpening asked: 'Should a child that believes in Santa Claus, the Easter Bunny and the tooth fairy be making life-altering decisions?' Well, of course not, but common sense has no meaning when you have a common purpose and a reframed mind. Treating children in this way, and police operating in American schools, is all part of the psychological preparation for children to accept a police state as normal all their adult lives. The same goes for all the cameras and biometric tracking technology in schools. Police training is focused on reframing them as snowflake Wokers and this is happening in the military. Pentagon top brass said that 'training sessions on extremism' were needed for troops who asked why they were so focused on the Capitol Building riot when Black Lives Matter riots were ignored. What's the difference between them some apparently and rightly asked. Actually, there is a difference. Five people died in the Capitol riot, only one through violence, and that was a police officer shooting an unarmed protestor. BLM riots killed at least 25 people and cost billions. Asking the question prompted the psychopaths and reframed minds that run the Pentagon to say that more 'education' (programming) was needed. Troop training is all based on psychological programming to make them fodder for the Cult – 'Military men are just dumb, stupid animals to be used as pawns in foreign policy' as Cult-to-his-DNA former Secretary of State Henry Kissinger famously said. Governments see the police in similar terms and it's time for those among them who can see this to defend the people and stop being enforcers of the Cult agenda upon the people.

The US military, like the country itself, is being targeted for destruction through a long list of Woke impositions. Cult-owned gaga 'President' Biden signed an executive order when he took office to allow taxpayer money to pay for transgender surgery for active military personnel and veterans. Are you a man soldier? No, I'm a LGBTQIA+ with a hint of Skoliosexual and Spectrasexual. Oh, good man. Bad choice of words you bigot. The Pentagon announced in March, 2021, the appointment of the first 'diversity and inclusion

officer' for US Special Forces. Richard Torres-Estrada arrived with the publication of a 'D&I Strategic Plan which will guide the enterprise-wide effort to institutionalize and sustain D&I'. If you think a Special Forces 'Strategic Plan' should have something to do with defending America you haven't been paying attention. Defending Woke is now the military's new role. Torres-Estrada has posted images comparing Donald Trump with Adolf Hitler and we can expect no bias from him as a representative of the supposedly non-political Pentagon. Cable news host Tucker Carlson said: 'The Pentagon is now the Yale faculty lounge but with cruise missiles.' Meanwhile Secretary of Defense Lloyd Austin, a board member of weapons-maker Raytheon with stock and compensation interests in October, 2020, worth $1.4 million, said he was purging the military of the 'enemy within' – anyone who isn't Woke and supports Donald Trump. Austin refers to his targets as 'racist extremists' while in true Woke fashion being himself a racist extremist. Pentagon documents pledge to 'eradicate, eliminate and conquer all forms of racism, sexism and homophobia'. The definitions of these are decided by 'diversity and inclusion committees' peopled by those who see racism, sexism and homophobia in every situation and opinion. Woke (the Cult) is dismantling the US military and purging testosterone as China expands its military and gives its troops 'masculinity training'. How do we think that is going to end when this is all Cult coordinated? The US military, like the British military, is controlled by Woke and spineless top brass who just go along with it out of personal career interests.

'Woke' means fast asleep

Mind control and perception manipulation techniques used on individuals to create group-think have been unleashed on the global population in general. As a result many have no capacity to see the obvious fascist agenda being installed all around them or what 'Covid' is really all about. Their brains are firewalled like a computer system not to process certain concepts, thoughts and realisations that are bad for the Cult. The young are most targeted as the adults they

will be when the whole fascist global state is planned to be fully implemented. They need to be prepared for total compliance to eliminate all pushback from entire generations. The Cult has been pouring billions into taking complete control of 'education' from schools to universities via its operatives and corporations and not least Bill Gates as always. The plan has been to transform 'education' institutions into programming centres for the mentality of 'Woke'. James McConnell, professor of psychology at the University of Michigan, wrote in *Psychology Today* in 1970:

> The day has come when we can combine sensory deprivation with drugs, hypnosis, and astute manipulation of reward and punishment, to gain almost absolute control over an individual's behaviour. It should then be possible to achieve a very rapid and highly effective type of brainwashing that would allow us to make dramatic changes in a person's behaviour and personality ...
>
> … We should reshape society so that we all would be trained from birth to want to do what society wants us to do. We have the techniques to do it... no-one owns his own personality you acquired, and there's no reason to believe you should have the right to refuse to acquire a new personality if your old one is anti-social.

This was the potential for mass brainwashing in 1970 and the mentality there displayed captures the arrogant psychopathy that drives it forward. I emphasise that not all young people have succumbed to Woke programming and those that haven't are incredibly impressive people given that today's young are the most perceptually-targeted generations in history with all the technology now involved. Vast swathes of the young generations, however, have fallen into the spell – and that's what it is – of Woke. The Woke mentality and perceptual program is founded on *inversion* and you will appreciate later why that is so significant. Everything with Woke is inverted and the opposite of what it is claimed to be. Woke was a term used in African-American culture from the 1900s and referred to an awareness of social and racial justice. This is not the meaning of the modern version or 'New Woke' as I call it in *The Answer*. Oh, no, Woke today means something very different no matter how much Wokers may seek to hide that and insist Old Woke and New

Woke are the same. See if you find any 'awareness of social justice' here in the modern variety:

- Woke demands 'inclusivity' while excluding anyone with a different opinion and calls for mass censorship to silence other views.

- Woke claims to stand against oppression when imposing oppression is the foundation of all that it does. It is the driver of political correctness which is nothing more than a Cult invention to manipulate the population to silence itself.

- Woke believes itself to be 'liberal' while pursuing a global society that can only be described as fascist (see 'anti-fascist' fascist Antifa).

- Woke calls for 'social justice' while spreading injustice wherever it goes against the common 'enemy' which can be easily identified as a differing view.

- Woke is supposed to be a metaphor for 'awake' when it is solid-gold asleep and deep in a Cult-induced coma that meets the criteria for 'off with the fairies'.

I state these points as obvious facts if people only care to look. I don't do this with a sense of condemnation. We need to appreciate that the onslaught of perceptual programming on the young has been incessant and merciless. I can understand why so many have been reframed, or, given their youth, framed from the start to see the world as the Cult demands. The Cult has had access to their minds day after day in its 'education' system for their entire formative years. Perception is formed from information received and the Cult-created system is a life-long download of information delivered to elicit a particular perception, thus behaviour. The more this has expanded into still new extremes in recent decades and ever-increasing censorship has deleted other opinions and information why wouldn't that lead to a perceptual reframing on a mass scale? I

have described already cradle-to-grave programming and in more recent times the targeting of young minds from birth to adulthood has entered the stratosphere. This has taken the form of skewing what is 'taught' to fit the Cult agenda and the omnipresent techniques of group-think to isolate non-believers and pressure them into line. There has always been a tendency to follow the herd, but we really are in a new world now in relation to that. We have parents who can see the 'Covid' hoax told by their children not to stop them wearing masks at school, being 'Covid' tested or having the 'vaccine' in fear of the peer-pressure consequences of being different. What is 'peer-pressure' if not pressure to conform to group-think? Renegade Minds never group-think and always retain a set of perceptions that are unique to them. Group-think is always underpinned by consequences for not group-thinking. Abuse now aimed at those refusing DNA-manipulating 'Covid vaccines' are a potent example of this. The biggest pressure to conform comes from the very group which is itself being manipulated. 'I am programmed to be part of a hive mind and so you must be.'

Woke control structures in 'education' now apply to every mainstream organisation. Those at the top of the 'education' hierarchy (the Cult) decide the policy. This is imposed on governments through the Cult network; governments impose it on schools, colleges and universities; their leadership impose the policy on teachers and academics and they impose it on children and students. At any level where there is resistance, perhaps from a teacher or university lecturer, they are targeted by the authorities and often fired. Students themselves regularly demand the dismissal of academics (increasingly few) at odds with the narrative that the students have been programmed to believe in. It is quite a thought that students who are being targeted by the Cult become so consumed by programmed group-think that they launch protests and demand the removal of those who are trying to push back against those targeting the students. Such is the scale of perceptual inversion. We see this with 'Covid' programming as the Cult imposes the rules via psycho-psychologists and governments on

shops, transport companies and businesses which impose them on their staff who impose them on their customers who pressure Pushbackers to conform to the will of the Cult which is in the process of destroying them and their families. Scan all aspects of society and you will see the same sequence every time.

Fact free Woke and hijacking the 'left'

There is no more potent example of this than 'Woke', a mentality only made possible by the deletion of factual evidence by an 'education' system seeking to produce an ever more uniform society. Why would you bother with facts when you don't know any? Deletion of credible history both in volume and type is highly relevant. Orwell said: 'Who controls the past controls the future: who controls the present controls the past.' They who control the perception of the past control the perception of the future and they who control the present control the perception of the past through the writing and deleting of history. Why would you oppose the imposition of Marxism in the name of Wokeism when you don't know that Marxism cost at least 100 million lives in the 20th century alone? Watch videos and read reports in which Woker generations are asked basic historical questions – it's mind-blowing. A survey of 2,000 people found that six percent of millennials (born approximately early1980s to early 2000s) believed the Second World War (1939-1945) broke out with the assassination of President Kennedy (in 1963) and one in ten thought Margaret Thatcher was British Prime Minister at the time. She was in office between 1979 and 1990. We are in a post-fact society. Provable facts are no defence against the fascism of political correctness or Silicon Valley censorship. Facts don't matter anymore as we have witnessed with the 'Covid' hoax. Sacrificing uniqueness to the Woke group-think religion is all you are required to do and that means thinking for yourself is the biggest Woke no, no. All religions are an expression of group-think and censorship and Woke is just another religion with an orthodoxy defended by group-think and censorship. Burned at

the stake becomes burned on Twitter which leads back eventually to burned at the stake as Woke humanity regresses to ages past.

The biggest Woke inversion of all is its creators and funders. I grew up in a traditional left of centre political household on a council estate in Leicester in the 1950s and 60s – you know, the left that challenged the power of wealth-hoarding elites and threats to freedom of speech and opinion. In those days students went on marches defending freedom of speech while today's Wokers march for its deletion. What on earth could have happened? Those very elites (collectively the Cult) that we opposed in my youth and early life have funded into existence the antithesis of that former left and hijacked the 'brand' while inverting everything it ever stood for. We have a mentality that calls itself 'liberal' and 'progressive' while acting like fascists. Cult billionaires and their corporations have funded themselves into control of 'education' to ensure that Woke programming is unceasing throughout the formative years of children and young people and that non-Wokers are isolated (that word again) whether they be students, teachers or college professors. The Cult has funded into existence the now colossal global network of Woke organisations that have spawned and promoted all the 'causes' on the Cult wish-list for global transformation and turned Wokers into demanders of them. Does anyone really think it's a coincidence that the Cult agenda for humanity is a carbon (sorry) copy of the societal transformations desired by Woke?? These are only some of them:

Political correctness: The means by which the Cult deletes all public debates that it knows it cannot win if we had the free-flow of information and evidence.

Human-caused 'climate change': The means by which the Cult seeks to transform society into a globally-controlled dictatorship imposing its will over the fine detail of everyone's lives 'to save the planet' which doesn't actually need saving.

Transgender obsession: Preparing collective perception to accept the 'new human' which would not have genders because it would be created technologically and not through procreation. I'll have much more on this in Human 2.0.

Race obsession: The means by which the Cult seeks to divide and rule the population by triggering racial division through the perception that society is more racist than ever when the opposite is the case. Is it perfect in that regard? No. But to compare today with the racism of apartheid and segregation brought to an end by the civil rights movement in the 1960s is to insult the memory of that movement and inspirations like Martin Luther King. Why is the 'anti-racism' industry (which it is) so dominated by privileged white people?

White supremacy: This is a label used by privileged white people to demonise poor and deprived white people pushing back on tyranny to marginalise and destroy them. White people are being especially targeted as the dominant race by number within Western society which the Cult seeks to transform in its image. If you want to change a society you must weaken and undermine its biggest group and once you have done that by using the other groups you next turn on them to do the same … 'Then they came for the Jews and I was not a Jew so I did nothing.'

Mass migration: The mass movement of people from the Middle East, Africa and Asia into Europe, from the south into the United States and from Asia into Australia are another way the Cult seeks to dilute the racial, cultural and political influence of white people on Western society. White people ask why their governments appear to be working against them while being politically and culturally biased towards incoming cultures. Well, here's your answer. In the same way sexually 'straight' people, men and women, ask why the

authorities are biased against them in favour of other sexualities. The answer is the same – that's the way the Cult wants it to be for very sinister motives.

These are all central parts of the Cult agenda and central parts of the Woke agenda and Woke was created and continues to be funded to an immense degree by Cult billionaires and corporations. If anyone begins to say 'coincidence' the syllables should stick in their throat.

Billionaire 'social justice warriors'

Joe Biden is a 100 percent-owned asset of the Cult and the Wokers' man in the White House whenever he can remember his name and for however long he lasts with his rapidly diminishing cognitive function. Even walking up the steps of an aircraft without falling on his arse would appear to be a challenge. He's not an empty-shell puppet or anything. From the minute Biden took office (or the Cult did) he began his executive orders promoting the Woke wish-list. You will see the Woke agenda imposed ever more severely because it's really the *Cult* agenda. Woke organisations and activist networks spawned by the Cult are funded to the extreme so long as they promote what the Cult wants to happen. Woke is funded to promote 'social justice' by billionaires who become billionaires by destroying social justice. The social justice mantra is only a cover for dismantling social justice and funded by billionaires that couldn't give a damn about social justice. Everything makes sense when you see that. One of Woke's premier funders is Cult billionaire financier George Soros who said: 'I am basically there to make money, I cannot and do not look at the social consequences of what I do.' This is the same Soros who has given more than $32 billion to his Open Society Foundations global Woke network and funded Black Lives Matter, mass immigration into Europe and the United States, transgender activism, climate change activism, political correctness and groups targeting 'white supremacy' in the form of privileged white thugs that dominate Antifa. What a scam it all is and when

you are dealing with the unquestioning fact-free zone of Woke scamming them is child's play. All you need to pull it off in all these organisations are a few in-the-know agents of the Cult and an army of naïve, reframed, uninformed, narcissistic, know-nothings convinced of their own self-righteousness, self-purity and virtue.

Soros and fellow billionaires and billionaire corporations have poured hundreds of millions into Black Lives Matter and connected groups and promoted them to a global audience. None of this is motivated by caring about black people. These are the billionaires that have controlled and exploited a system that leaves millions of black people in abject poverty and deprivation which they do absolutely nothing to address. The same Cult networks funding BLM were behind the *slave trade!* Black Lives Matter hijacked a phrase that few would challenge and they have turned this laudable concept into a political weapon to divide society. You know that BLM is a fraud when it claims that *All* Lives Matter, the most inclusive statement of all, is 'racist'. BLM and its Cult masters don't want to end racism. To them it's a means to an end to control all of humanity never mind the colour, creed, culture or background. What has destroying the nuclear family got to do with ending racism? Nothing – but that is one of the goals of BLM and also happens to be a goal of the Cult as I have been exposing in my books for decades. Stealing children from loving parents and giving schools ever more power to override parents is part of that same agenda. BLM is a Marxist organisation and why would that not be the case when the Cult created Marxism *and* BLM? Patrisse Cullors, a BLM co-founder, said in a 2015 video that she and her fellow organisers, including co-founder Alicia Garza, are 'trained Marxists'. The lady known after marriage as Patrisse Khan-Cullors bought a $1.4 million home in 2021 in one of the whitest areas of California with a black population of just 1.6 per cent and has so far bought *four* high-end homes for a total of $3.2 million. How very Marxist. There must be a bit of spare in the BLM coffers, however, when Cult corporations and billionaires have handed over the best part of $100 million. Many black people can see that Black Lives Matter is not

working for them, but against them, and this is still more confirmation. Black journalist Jason Whitlock, who had his account suspended by Twitter for simply linking to the story about the 'Marxist's' home buying spree, said that BLM leaders are 'making millions of dollars off the backs of these dead black men who they wouldn't spit on if they were on fire and alive'.

Black Lies Matter

Cult assets and agencies came together to promote BLM in the wake of the death of career criminal George Floyd who had been jailed a number of times including for forcing his way into the home of a black woman with others in a raid in which a gun was pointed at her stomach. Floyd was filmed being held in a Minneapolis street in 2020 with the knee of a police officer on his neck and he subsequently died. It was an appalling thing for the officer to do, but the same technique has been used by police on peaceful protestors of lockdown without any outcry from the Woke brigade. As unquestioning supporters of the Cult agenda Wokers have supported lockdown and all the 'Covid' claptrap while attacking anyone standing up to the tyranny imposed in its name. Court documents would later include details of an autopsy on Floyd by County Medical Examiner Dr Andrew Baker who concluded that Floyd had taken a fatal level of the drug fentanyl. None of this mattered to fact-free, question-free, Woke. Floyd's death was followed by worldwide protests against police brutality amid calls to defund the police. Throwing babies out with the bathwater is a Woke speciality. In the wake of the murder of British woman Sarah Everard a Green Party member of the House of Lords, Baroness Jones of Moulescoomb (Nincompoopia would have been better), called for a 6pm curfew for all men. This would be in breach of the Geneva Conventions on war crimes which ban collective punishment, but that would never have crossed the black and white Woke mind of Baroness Nincompoopia who would have been far too convinced of her own self-righteousness to compute such details. Many American cities did defund the police in the face of Floyd riots

and after $15 million was deleted from the police budget in Washington DC under useless Woke mayor Muriel Bowser car-jacking alone rose by 300 percent and within six months the US capital recorded its highest murder rate in 15 years. The same happened in Chicago and other cities in line with the Cult/Soros plan to bring fear to streets and neighbourhoods by reducing the police, releasing violent criminals and not prosecuting crime. This is the mob-rule agenda that I have warned in the books was coming for so long. Shootings in the area of Minneapolis where Floyd was arrested increased by 2,500 percent compared with the year before. Defunding the police over George Floyd has led to a big increase in dead people with many of them black. Police protection for politicians making these decisions stayed the same or increased as you would expect from professional hypocrites. The Cult doesn't actually want to abolish the police. It wants to abolish local control over the police and hand it to federal government as the psychopaths advance the Hunger Games Society. Many George Floyd protests turned into violent riots with black stores and businesses destroyed by fire and looting across America fuelled by Black Lives Matter. Woke doesn't do irony. If you want civil rights you must loot the liquor store and the supermarket and make off with a smart TV. It's the only way.

It's not a race war – it's a class war

Black people are patronised by privileged blacks and whites alike and told they are victims of white supremacy. I find it extraordinary to watch privileged blacks supporting the very system and bloodline networks behind the slave trade and parroting the same Cult-serving manipulative crap of their privileged white, often billionaire, associates. It is indeed not a race war but a class war and colour is just a diversion. Black Senator Cory Booker and black Congresswoman Maxine Waters, more residents of Nincompoopia, personify this. Once you tell people they are victims of someone else you devalue both their own responsibility for their plight and the power they have to impact on their reality and experience. Instead

we have: 'You are only in your situation because of whitey – turn on them and everything will change.' It won't change. Nothing changes in our lives unless *we* change it. Crucial to that is never seeing yourself as a victim and always as the creator of your reality. Life is a simple sequence of choice and consequence. Make different choices and you create different consequences. *You* have to make those choices – not Black Lives Matter, the Woke Mafia and anyone else that seeks to dictate your life. Who are they these Wokers, an emotional and psychological road traffic accident, to tell you what to do? Personal empowerment is the last thing the Cult and its Black Lives Matter want black people or anyone else to have. They claim to be defending the underdog while *creating* and perpetuating the underdog. The Cult's worst nightmare is human unity and if they are going to keep blacks, whites and every other race under economic servitude and control then the focus must be diverted from what they have in common to what they can be manipulated to believe divides them. Blacks have to be told that their poverty and plight is the fault of the white bloke living on the street in the same poverty and with the same plight they are experiencing. The difference is that your plight black people is due to him, a white supremacist with 'white privilege' living on the street. Don't unite as one human family against your mutual oppressors and suppressors – fight the oppressor with the white face who is as financially deprived as you are. The Cult knows that as its 'Covid' agenda moves into still new levels of extremism people are going to respond and it has been spreading the seeds of disunity everywhere to stop a united response to the evil that targets *all of us*.

Racist attacks on 'whiteness' are getting ever more outrageous and especially through the American Democratic Party which has an appalling history for anti-black racism. Barack Obama, Joe Biden, Hillary Clinton and Nancy Pelosi all eulogised about Senator Robert Byrd at his funeral in 2010 after a nearly 60-year career in Congress. Byrd was a brutal Ku Klux Klan racist and a violent abuser of Cathy O'Brien in MKUltra. He said he would never fight in the military 'with a negro by my side' and 'rather I should die a thousand times,

and see Old Glory trampled in the dirt never to rise again, than to see this beloved land of ours become degraded by race mongrels, a throwback to the blackest specimen from the wilds'. Biden called Byrd a 'very close friend and mentor'. These 'Woke' hypocrites are not anti-racist they are anti-poor and anti-people not of their perceived class. Here is an illustration of the scale of anti-white racism to which we have now descended. Seriously Woke and moronic *New York Times* contributor Damon Young described whiteness as a 'virus' that 'like other viruses will not die until there are no bodies left for it to infect'. He went on: '… the only way to stop it is to locate it, isolate it, extract it, and kill it.' Young can say that as a black man with no consequences when a white man saying the same in reverse would be facing a jail sentence. *That's* racism. We had super-Woke numbskull senators Tammy Duckworth and Mazie Hirono saying they would object to future Biden Cabinet appointments if he did not nominate more Asian Americans and Pacific Islanders. Never mind the ability of the candidate what do they look like? Duckworth said: 'I will vote for racial minorities and I will vote for LGBTQ, but anyone else I'm not voting for.' Appointing people on the grounds of race is illegal, but that was not a problem for this ludicrous pair. They were on-message and that's a free pass in any situation.

Critical race racism

White children are told at school they are intrinsically racist as they are taught the divisive 'critical race theory'. This claims that the law and legal institutions are inherently racist and that race is a socially constructed concept used by white people to further their economic and political interests at the expense of people of colour. White is a 'virus' as we've seen. Racial inequality results from 'social, economic, and legal differences that white people create between races to maintain white interests which leads to poverty and criminality in minority communities'. I must tell that to the white guy sleeping on the street. The principal of East Side Community School in New York sent white parents a manifesto that called on

them to become 'white traitors' and advocate for full 'white abolition'. These people are teaching your kids when they urgently need a psychiatrist. The 'school' included a chart with 'eight white identities' that ranged from 'white supremacist' to 'white abolition' and defined the behaviour white people must follow to end 'the regime of whiteness'. Woke blacks and their privileged white associates are acting exactly like the slave owners of old and Ku Klux Klan racists like Robert Byrd. They are too full of their own self-purity to see that, but it's true. Racism is not a body type; it's a state of mind that can manifest through any colour, creed or culture.

Another racial fraud is *'equity'*. Not equality of treatment and opportunity – equity. It's a term spun as equality when it means something very different. Equality in its true sense is a raising up while 'equity' is a race to the bottom. Everyone in the same level of poverty is 'equity'. Keep everyone down – that's equity. The Cult doesn't want anyone in the human family to be empowered and BLM leaders, like all these 'anti-racist' organisations, continue their privileged, pampered existence by perpetuating the perception of gathering racism. When is the last time you heard an 'anti-racist' or 'anti-Semitism' organisation say that acts of racism and discrimination have *fallen?* It's not in the interests of their fund-raising and power to influence and the same goes for the professional soccer anti-racism operation, Kick It Out. Two things confirmed that the Black Lives Matter riots in the summer of 2020 were Cult creations. One was that while anti-lockdown protests were condemned in this same period for 'transmitting 'Covid' the authorities supported mass gatherings of Black Lives Matter supporters. I even saw self-deluding people claiming to be doctors say the two types of protest were not the same. No – the non-existent 'Covid' was in favour of lockdowns and attacked those that protested against them while 'Covid' supported Black Lives Matter and kept well away from its protests. The whole thing was a joke and as lockdown protestors were arrested, often brutally, by reframed Face-Nappies we had the grotesque sight of police officers taking the knee to Black Lives Matter, a Cult-funded Marxist

organisation that supports violent riots and wants to destroy the nuclear family and white people.

He's not white? Shucks!

Woke obsession with race was on display again when ten people were shot dead in Boulder, Colorado, in March, 2021. Cult-owned Woke TV channels like CNN said the shooter appeared to be a white man and Wokers were on Twitter condemning 'violent white men' with the usual mantras. Then the shooter's name was released as Ahmad Al Aliwi Alissa, an anti-Trump Arab-American, and the sigh of disappointment could be heard five miles away. Never mind that ten people were dead and what that meant for their families. Race baiting was all that mattered to these sick Cult-serving people like Barack Obama who exploited the deaths to further divide America on racial grounds which is his job for the Cult. This is the man that 'racist' white Americans made the first black president of the United States and then gave him a second term. Not-very-bright Obama has become filthy rich on the back of that and today appears to have a big influence on the Biden administration. Even so he's still a downtrodden black man and a victim of white supremacy. This disingenuous fraud reveals the contempt he has for black people when he puts on a Deep South Alabama accent whenever he talks to them, no, *at* them.

Another BLM red flag was how the now fully-Woke (fully-Cult) and fully-virtue-signalled professional soccer authorities had their teams taking the knee before every match in support of Marxist Black Lives Matter. Soccer authorities and clubs displayed 'Black Lives Matter' on the players' shirts and flashed the name on electronic billboards around the pitch. Any fans that condemned what is a Freemasonic taking-the-knee ritual were widely condemned as you would expect from the Woke virtue-signallers of professional sport and the now fully-Woke media. We have reverse racism in which you are banned from criticising any race or culture except for white people for whom anything goes – say what you like, no problem. What has this got to do with racial harmony and

equality? We've had black supremacists from Black Lives Matter telling white people to fall to their knees in the street and apologise for their white supremacy. Black supremacists acting like white supremacist slave owners of the past couldn't breach their self-obsessed, race-obsessed sense of self-purity. Joe Biden appointed a race-obsessed black supremacist Kristen Clarke to head the Justice Department Civil Rights Division. Clarke claimed that blacks are endowed with 'greater mental, physical and spiritual abilities' than whites. If anyone reversed that statement they would be vilified. Clarke is on-message so no problem. She's never seen a black-white situation in which the black figure is anything but a virtuous victim and she heads the Civil Rights Division which should treat everyone the same or it isn't civil rights. Another perception of the Renegade Mind: If something or someone is part of the Cult agenda they will be supported by Woke governments and media no matter what. If they're not, they will be condemned and censored. It really is that simple and so racist Clarke prospers despite (make that because of) her racism.

The end of culture

Biden's administration is full of such racial, cultural and economic bias as the Cult requires the human family to be divided into warring factions. We are now seeing racially-segregated graduations and everything, but everything, is defined through the lens of perceived 'racism. We have 'racist' mathematics, 'racist' food and even 'racist' *plants*. World famous Kew Gardens in London said it was changing labels on plants and flowers to tell its pre-'Covid' more than two million visitors a year how racist they are. Kew director Richard Deverell said this was part of an effort to 'move quickly to decolonise collections' after they were approached by one Ajay Chhabra 'an actor with an insight into how sugar cane was linked to slavery'. They are *plants* you idiots. 'Decolonisation' in the Woke manual really means colonisation of society with its mentality and by extension colonisation by the Cult. We are witnessing a new Chinese-style 'Cultural Revolution' so essential to the success of all

Marxist takeovers. Our cultural past and traditions have to be swept away to allow a new culture to be built-back-better. Woke targeting of long-standing Western cultural pillars including historical monuments and cancelling of historical figures is what happened in the Mao revolution in China which 'purged remnants of capitalist and traditional elements from Chinese society' and installed Maoism as the dominant ideology'. For China see the Western world today and for 'dominant ideology' see Woke. Better still see Marxism or Maoism. The 'Covid' hoax has specifically sought to destroy the arts and all elements of Western culture from people meeting in a pub or restaurant to closing theatres, music venues, sports stadiums, places of worship and even banning *singing*. Destruction of Western society is also why criticism of any religion is banned except for Christianity which again is the dominant religion as white is the numerically-dominant race. Christianity may be fading rapidly, but its history and traditions are weaved through the fabric of Western society. Delete the pillars and other structures will follow until the whole thing collapses. I am not a Christian defending that religion when I say that. I have no religion. It's just a fact. To this end Christianity has itself been turned Woke to usher its own downfall and its ranks are awash with 'change agents' – knowing and unknowing – at every level including Pope Francis (*definitely* knowing) and the clueless Archbishop of Canterbury Justin Welby (possibly not, but who can be sure?). Woke seeks to coordinate attacks on Western culture, traditions, and ways of life through 'intersectionality' defined as 'the complex, cumulative way in which the effects of multiple forms of discrimination (such as racism, sexism, and classism) combine, overlap, or intersect especially in the experiences of marginalised individuals or groups'. Wade through the Orwellian Woke-speak and this means coordinating disparate groups in a common cause to overthrow freedom and liberal values.

The entire structure of public institutions has been infested with Woke – government at all levels, political parties, police, military, schools, universities, advertising, media and trade unions. This abomination has been achieved through the Cult web by appointing

Wokers to positions of power and battering non-Wokers into line through intimidation, isolation and threats to their job. Many have been fired in the wake of the empathy-deleted, vicious hostility of 'social justice' Wokers and the desire of gutless, spineless employers to virtue-signal their Wokeness. Corporations are filled with Wokers today, most notably those in Silicon Valley. Ironically at the top they are not Woke at all. They are only exploiting the mentality their Cult masters have created and funded to censor and enslave while the Wokers cheer them on until it's their turn. Thus the Woke 'liberal left' is an inversion of the traditional liberal left. Campaigning for justice on the grounds of power and wealth distribution has been replaced by campaigning for identity politics. The genuine traditional left would never have taken money from today's billionaire abusers of fairness and justice and nor would the billionaires have wanted to fund that genuine left. It would not have been in their interests to do so. The division of opinion in those days was between the haves and have nots. This all changed with Cult manipulated and funded identity politics. The division of opinion today is between Wokers and non-Wokers and not income brackets. Cult corporations and their billionaires may have taken wealth disparity to cataclysmic levels of injustice, but as long as they speak the language of Woke, hand out the dosh to the Woke network and censor the enemy they are 'one of us'. Billionaires who don't give a damn about injustice are laughing at them till their bellies hurt. Wokers are not even close to self-aware enough to see that. The transformed 'left' dynamic means that Wokers who drone on about 'social justice' are funded by billionaires that have destroyed social justice the world over. It's *why* they are billionaires.

The climate con

Nothing encapsulates what I have said more comprehensively than the hoax of human-caused global warming. I have detailed in my books over the years how Cult operatives and organisations were the pump-primers from the start of the climate con. A purpose-built vehicle for this is the Club of Rome established by the Cult in 1968

with the Rockefellers and Rothschilds centrally involved all along. Their gofer frontman Maurice Strong, a Canadian oil millionaire, hosted the Earth Summit in Rio de Janeiro, Brazil, in 1992 where the global 'green movement' really expanded in earnest under the guiding hand of the Cult. The Earth Summit established Agenda 21 through the Cult-created-and-owned United Nations to use the illusion of human-caused climate change to justify the transformation of global society to save the world from climate disaster. It is a No-Problem-Reaction-Solution sold through governments, media, schools and universities as whole generations have been terrified into believing that the world was going to end in their lifetimes unless what old people had inflicted upon them was stopped by a complete restructuring of how everything is done. Chill, kids, it's all a hoax. Such restructuring is precisely what the Cult agenda demands (purely by coincidence of course). Today this has been given the codename of the Great Reset which is only an updated term for Agenda 21 and its associated Agenda 2030. The latter, too, is administered through the UN and was voted into being by the General Assembly in 2015. Both 21 and 2030 seek centralised control of all resources and food right down to the raindrops falling on your own land. These are some of the demands of Agenda 21 established in 1992. See if you recognise this society emerging today:

- End national sovereignty
- State planning and management of all land resources, ecosystems, deserts, forests, mountains, oceans and fresh water; agriculture; rural development; biotechnology; and ensuring *'equity'*
- The state to 'define the role' of business and financial resources
- Abolition of private property
- 'Restructuring' the family unit (see BLM)
- Children raised by the state
- People told what their job will be
- Major restrictions on movement
- Creation of 'human settlement zones'

- Mass resettlement as people are forced to vacate land where they live
- Dumbing down education
- Mass global depopulation in pursuit of all the above

The United Nations was created as a Trojan horse for world government. With the climate con of critical importance to promoting that outcome you would expect the UN to be involved. Oh, it's involved all right. The UN is promoting Agenda 21 and Agenda 2030 justified by 'climate change' while also driving the climate hoax through its Intergovernmental Panel on Climate Change (IPCC), one of the world's most corrupt organisations. The IPCC has been lying ferociously and constantly since the day it opened its doors with the global media hanging unquestioningly on its every mendacious word. The Green movement is entirely Woke and has long lost its original environmental focus since it was co-opted by the Cult. An obsession with 'global warming' has deleted its values and scrambled its head. I experienced a small example of what I mean on a beautiful country walk that I have enjoyed several times a week for many years. The path merged into the fields and forests and you felt at one with the natural world. Then a 'Green' organisation, the Hampshire and Isle of Wight Wildlife Trust, took over part of the land and proceeded to cut down a large number of trees, including mature ones, to install a horrible big, bright steel 'this-is-ours-stay-out' fence that destroyed the whole atmosphere of this beautiful place. No one with a feel for nature would do that. Day after day I walked to the sound of chainsaws and a magnificent mature weeping willow tree that I so admired was cut down at the base of the trunk. When I challenged a Woke young girl in a green shirt (of course) about this vandalism she replied: 'It's a weeping willow – it will grow back.' This is what people are paying for when they donate to the Hampshire and Isle of Wight Wildlife Trust and many other 'green' organisations today. It is not the environmental movement that I knew and instead has become a support-system – as with Extinction Rebellion – for a very dark agenda.

Private jets for climate justice

The Cult-owned, Gates-funded, World Economic Forum and its founder Klaus Schwab were behind the emergence of Greta Thunberg to harness the young behind the climate agenda and she was invited to speak to the world at … the UN. Schwab published a book, *Covid-19: The Great Reset* in 2020 in which he used the 'Covid' hoax and the climate hoax to lay out a new society straight out of Agenda 21 and Agenda 2030. Bill Gates followed in early 2021 when he took time out from destroying the world to produce a book in his name about the way to save it. Gates flies across the world in private jets and admitted that 'I probably have one of the highest greenhouse gas footprints of anyone on the planet … my personal flying alone is gigantic.' He has also bid for the planet's biggest private jet operator. Other climate change saviours who fly in private jets include John Kerry, the US Special Presidential Envoy for Climate, and actor Leonardo DiCaprio, a 'UN Messenger of Peace with special focus on climate change'. These people are so full of bullshit they could corner the market in manure. We mustn't be sceptical, though, because the Gates book, *How to Avoid a Climate Disaster: The Solutions We Have and the Breakthroughs We Need*, is a genuine attempt to protect the world and not an obvious pile of excrement attributed to a mega-psychopath aimed at selling his masters' plans for humanity. The Gates book and the other shite-pile by Klaus Schwab could have been written by the same person and may well have been. Both use 'climate change' and 'Covid' as the excuses for their new society and by coincidence the Cult's World Economic Forum and Bill and Melinda Gates Foundation promote the climate hoax and hosted Event 201 which pre-empted with a 'simulation' the very 'coronavirus' hoax that would be simulated for real on humanity within weeks. The British 'royal' family is promoting the 'Reset' as you would expect through Prince 'climate change caused the war in Syria' Charles and his hapless son Prince William who said that we must 'reset our relationship with nature and our trajectory as a species' to avoid a climate disaster. Amazing how many promotors of the 'Covid' and 'climate change' control

systems are connected to Gates and the World Economic Forum. A 'study' in early 2021 claimed that carbon dioxide emissions must fall by the equivalent of a global lockdown roughly every two years for the next decade to save the planet. The 'study' appeared in the same period that the Schwab mob claimed in a video that lockdowns destroying the lives of billions are good because they make the earth 'quieter' with less 'ambient noise'. They took down the video amid a public backlash for such arrogant, empathy-deleted stupidity You see, however, where they are going with this. Corinne Le Quéré, a professor at the Tyndall Centre for Climate Change Research, University of East Anglia, was lead author of the climate lockdown study, and she writes for … the World Economic Forum. Gates calls in 'his' book for changing 'every aspect of the economy' (long-time Cult agenda) and for humans to eat synthetic 'meat' (predicted in my books) while cows and other farm animals are eliminated. Australian TV host and commentator Alan Jones described what carbon emission targets would mean for farm animals in Australia alone if emissions were reduced as demanded by 35 percent by 2030 and zero by 2050:

Well, let's take agriculture, the total emissions from agriculture are about 75 million tonnes of carbon dioxide, equivalent. Now reduce that by 35 percent and you have to come down to 50 million tonnes, I've done the maths. So if you take for example 1.5 million cows, you're going to have to reduce the herd by 525,000 [by] 2030, nine years, that's 58,000 cows a year. The beef herd's 30 million, reduce that by 35 percent, that's 10.5 million, which means 1.2 million cattle have to go every year between now and 2030. This is insanity!

There are 75 million sheep. Reduce that by 35 percent, that's 26 million sheep, that's almost 3 million a year. So under the Paris Agreement over 30 million beasts. dairy cows, cattle, pigs and sheep would go. More than 8,000 every minute of every hour for the next decade, do these people know what they're talking about?

Clearly they don't at the level of campaigners, politicians and administrators. The Cult *does* know; that's the outcome it wants. We are faced with not just a war on humanity. Animals and the natural world are being targeted and I have been saying since the 'Covid' hoax began that the plan eventually was to claim that the 'deadly virus' is able to jump from animals, including farm animals and

domestic pets, to humans. Just before this book went into production came this story: 'Russia registers world's first Covid-19 vaccine for cats & dogs as makers of Sputnik V warn pets & farm animals could spread virus'. The report said 'top scientists warned that the deadly pathogen could soon begin spreading through homes and farms' and 'the next stage is the infection of farm and domestic animals'. Know the outcome and you'll see the journey. Think what that would mean for animals and keep your eye on a term called zoonosis or zoonotic diseases which transmit between animals and humans. The Cult wants to break the connection between animals and people as it does between people and people. Farm animals fit with the Cult agenda to transform food from natural to synthetic.

The gas of life is killing us

There can be few greater examples of Cult inversion than the condemnation of carbon dioxide as a dangerous pollutant when it is the gas of life. Without it the natural world would be dead and so we would all be dead. We breathe in oxygen and breathe out carbon dioxide while plants produce oxygen and absorb carbon dioxide. It is a perfect symbiotic relationship that the Cult wants to dismantle for reasons I will come to in the final two chapters. Gates, Schwab, other Cult operatives and mindless repeaters, want the world to be 'carbon neutral' by at least 2050 and the earlier the better. 'Zero carbon' is the cry echoed by lunatics calling for 'Zero Covid' when we already have it. These carbon emission targets will deindustrialise the world in accordance with Cult plans – the post-industrial, post-democratic society – and with so-called renewables like solar and wind not coming even close to meeting human energy needs blackouts and cold are inevitable. Texans got the picture in the winter of 2021 when a snow storm stopped wind turbines and solar panels from working and the lights went down along with water which relies on electricity for its supply system. Gates wants everything to be powered by electricity to ensure that his masters have the kill switch to stop all human activity, movement, cooking, water and warmth any time they like. The climate lie is so

stupendously inverted that it claims we must urgently reduce carbon dioxide when we *don't have enough*.

Co2 in the atmosphere is a little above 400 parts per million when the optimum for plant growth is 2,000 ppm and when it falls anywhere near 150 ppm the natural world starts to die and so do we. It fell to as low as 280 ppm in an 1880 measurement in Hawaii and rose to 413 ppm in 2019 with industrialisation which is why the planet has become *greener* in the industrial period. How insane then that psychopathic madman Gates is not satisfied only with blocking the rise of Co2. He's funding technology to suck it out of the atmosphere. The reason why will become clear. The industrial era is not destroying the world through Co2 and has instead turned around a potentially disastrous ongoing fall in Co2. Greenpeace co-founder and scientist Patrick Moore walked away from Greenpeace in 1986 and has exposed the green movement for fear-mongering and lies. He said that 500 million years ago there was *17 times* more Co2 in the atmosphere than we have today and levels have been falling for hundreds of millions of years. In the last 150 million years Co2 levels in Earth's atmosphere had reduced by *90 percent*. Moore said that by the time humanity began to unlock carbon dioxide from fossil fuels we were at '38 seconds to midnight' and in that sense: 'Humans are [the Earth's] salvation.' Moore made the point that only half the Co2 emitted by fossil fuels stays in the atmosphere and we should remember that all pollution pouring from chimneys that we are told is carbon dioxide is in fact nothing of the kind. It's pollution. Carbon dioxide is an invisible gas.

William Happer, Professor of Physics at Princeton University and long-time government adviser on climate, has emphasised the Co2 deficiency for maximum growth and food production. Greenhouse growers don't add carbon dioxide for a bit of fun. He said that most of the warming in the last 100 years, after the earth emerged from the super-cold period of the 'Little Ice Age' into a natural warming cycle, was over by 1940. Happer said that a peak year for warming in 1988 can be explained by a 'monster El Nino' which is a natural and cyclical warming of the Pacific that has nothing to do with 'climate

change'. He said the effect of Co2 could be compared to painting a wall with red paint in that once two or three coats have been applied it didn't matter how much more you slapped on because the wall will not get much redder. Almost all the effect of the rise in Co2 has already happened, he said, and the volume in the atmosphere would now have to *double* to increase temperature by a single degree. Climate hoaxers know this and they have invented the most ridiculously complicated series of 'feedback' loops to try to overcome this rather devastating fact. You hear puppet Greta going on cluelessly about feedback loops and this is why.

The Sun affects temperature? No you *climate denier*

Some other nonsense to contemplate: Climate graphs show that rises in temperature do not follow rises in Co2 – *it's the other way round* with a lag between the two of some 800 years. If we go back 800 years from present time we hit the Medieval Warm Period when temperatures were higher than now without any industrialisation and this was followed by the Little Ice Age when temperatures plummeted. The world was still emerging from these centuries of serious cold when many climate records began which makes the ever-repeated line of the 'hottest year since records began' meaningless when you are not comparing like with like. The coldest period of the Little Ice Age corresponded with the lowest period of sunspot activity when the Sun was at its least active. Proper scientists will not be at all surprised by this when it confirms the obvious fact that earth temperature is affected by the scale of Sun activity and the energetic power that it subsequently emits; but when is the last time you heard a climate hoaxer talking about the Sun as a source of earth temperature?? Everything has to be focussed on Co2 which makes up just 0.117 percent of so-called greenhouse gases and only a fraction of even that is generated by human activity. The rest is natural. More than *90 percent* of those greenhouse gases are water vapour and clouds (Fig 9). Ban moisture I say. Have you noticed that the climate hoaxers no longer use the polar bear as their promotion image? That's because far from becoming extinct polar

bear communities are stable or thriving. Joe Bastardi, American meteorologist, weather forecaster and outspoken critic of the climate lie, documents in his book *The Climate Chronicles* how weather patterns and events claimed to be evidence of climate change have been happening since long before industrialisation: 'What happened before naturally is happening again, as is to be expected given the cyclical nature of the climate due to the design of the planet.' If you read the detailed background to the climate hoax in my other books you will shake your head and wonder how anyone could believe the crap which has spawned a multi-trillion dollar industry based on absolute garbage (see HIV causes AIDs and Sars-Cov-2 causes 'Covid-19'). Climate and 'Covid' have much in common given they have the same source. They both have the contradictory *everything* factor in which everything is explained by reference to them. It's hot – 'it's climate change'. It's cold – 'it's climate change'. I got a sniffle – 'it's Covid'. I haven't got a sniffle – 'it's Covid'. Not having a sniffle has to be a symptom of 'Covid'. Everything is and not having a sniffle is especially dangerous if you are a slow walker. For sheer audacity I offer you a Cambridge University 'study' that actually linked 'Covid' to 'climate change'. It had to happen eventually. They concluded that climate change played a role in 'Covid-19' spreading from animals to humans because … wait for it … I kid you not … *the two groups were forced closer together as populations grow*. Er, that's it. The whole foundation on which this depended was that 'Bats are the likely zoonotic origin of SARS-CoV-1 and SARS-CoV-2'. Well, they are not. They are nothing to do with it. Apart from bats not being the origin and therefore 'climate change' effects on bats being irrelevant I am in awe of their academic insight. Where would we be without them? Not where we are that's for sure.

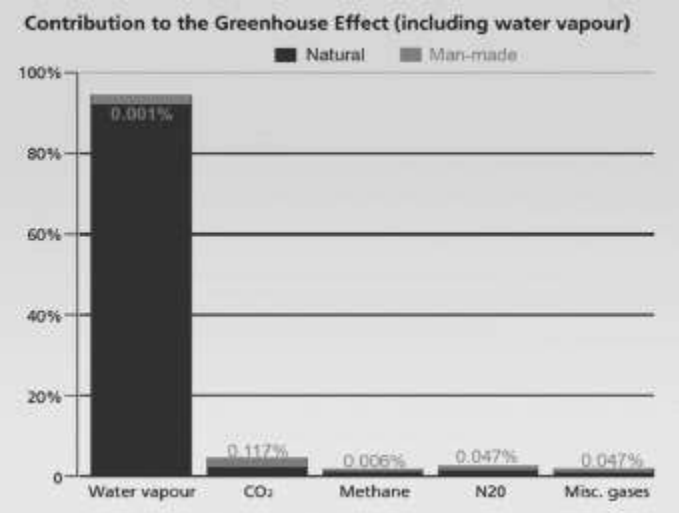

Figure 9: The idea that the gas of life is disastrously changing the climate is an insult to brain cell activity.

One other point about the weather is that climate modification is now well advanced and not every major weather event is natural – or earthquake come to that. I cover this subject at some length in other books. China is openly planning a rapid expansion of its weather modification programme which includes changing the climate in an area more than one and a half times the size of India. China used weather manipulation to ensure clear skies during the 2008 Olympics in Beijing. I have quoted from US military documents detailing how to employ weather manipulation as a weapon of war and they did that in the 1960s and 70s during the conflict in Vietnam with Operation Popeye manipulating monsoon rains for military purposes. Why would there be international treaties on weather modification if it wasn't possible? Of course it is. Weather is energetic information and it can be changed.

How was the climate hoax pulled off? See 'Covid'

If you can get billions to believe in a 'virus' that doesn't exist you can get them to believe in human-caused climate change that doesn't exist. Both are being used by the Cult to transform global society in the way it has long planned. Both hoaxes have been achieved in pretty much the same way. First you declare a lie is a fact. There's a

'virus' you call SARS-Cov-2 or humans are warming the planet with their behaviour. Next this becomes, via Cult networks, the foundation of government, academic and science policy and belief. Those who parrot the mantra are given big grants to produce research that confirms the narrative is true and ever more 'symptoms' are added to make the 'virus'/'climate change' sound even more scary. Scientists and researchers who challenge the narrative have their grants withdrawn and their careers destroyed. The media promote the lie as the unquestionable truth and censor those with an alternative view or evidence. A great percentage of the population believe what they are told as the lie becomes an everybody-knows-that and the believing-masses turn on those with a mind of their own. The technique has been used endlessly throughout human history. Wokers are the biggest promotors of the climate lie *and* 'Covid' fascism because their minds are owned by the Cult; their sense of self-righteous self-purity knows no bounds; and they exist in a bubble of reality in which facts are irrelevant and only get in the way of looking without seeing.

Running through all of this like veins in a blue cheese is control of information, which means control of perception, which means control of behaviour, which collectively means control of human society. The Cult owns the global media and Silicon Valley fascists for the simple reason that it *has* to. Without control of information it can't control perception and through that human society. Examine every facet of the Cult agenda and you will see that anything supporting its introduction is never censored while anything pushing back is always censored. I say again: Psychopaths that know why they are doing this must go before Nuremberg trials and those that follow their orders must trot along behind them into the same dock. 'I was just following orders' didn't work the first time and it must not work now. Nuremberg trials must be held all over the world before public juries for politicians, government officials, police, compliant doctors, scientists and virologists, and all Cult operatives such as Gates, Tedros, Fauci, Vallance, Whitty, Ferguson, Zuckerberg, Wojcicki, Brin, Page, Dorsey, the whole damn lot of

them – including, no *especially*, the psychopath psychologists. Without them and the brainless, gutless excuses for journalists that have repeated their lies, none of this could be happening. Nobody can be allowed to escape justice for the psychological and economic Armageddon they are all responsible for visiting upon the human race.

As for the compliant, unquestioning, swathes of humanity, and the self-obsessed, all-knowing ignorance of the Wokers … don't start me. God help their kids. God help their grandkids. God *help them*.

CHAPTER NINE

We must have it? So what is it?

Well I won't back down. No, I won't back down. You can stand me up at the Gates of Hell. But I won't back down
Tom Petty

I will now focus on the genetically-manipulating 'Covid vaccines' which do not meet this official definition of a vaccine by the US Centers for Disease Control (CDC): 'A product that stimulates a person's immune system to produce immunity to a specific disease, protecting the person from that disease.' On that basis 'Covid vaccines' are not a vaccine in that the makers don't even claim they stop infection or transmission.

They are instead part of a multi-levelled conspiracy to change the nature of the human body and what it means to be 'human' and to depopulate an enormous swathe of humanity. What I shall call Human 1.0 is on the cusp of becoming Human 2.0 and for very sinister reasons. Before I get to the 'Covid vaccine' in detail here's some background to vaccines in general. Government regulators do not test vaccines – the makers do – and the makers control which data is revealed and which isn't. Children in America are given 50 vaccine doses by age six and 69 by age 19 and the effect of the whole combined schedule has never been tested. Autoimmune diseases when the immune system attacks its own body have soared in the mass vaccine era and so has disease in general in children and the young. Why wouldn't this be the case when vaccines target the *immune system?* The US government gave Big Pharma drug

companies immunity from prosecution for vaccine death and injury in the 1986 National Childhood Vaccine Injury Act (NCVIA) and since then the government (taxpayer) has been funding compensation for the consequences of Big Pharma vaccines. The criminal and satanic drug giants can't lose and the vaccine schedule has increased dramatically since 1986 for this reason. There is no incentive to make vaccines safe and a big incentive to make money by introducing ever more. Even against a ridiculously high bar to prove vaccine liability, and with the government controlling the hearing in which it is being challenged for compensation, the vaccine court has so far paid out more than $4 billion. These are the vaccines we are told are safe and psychopaths like Zuckerberg censor posts saying otherwise. The immunity law was even justified by a ruling that vaccines by their nature were 'unavoidably unsafe'.

Check out the ingredients of vaccines and you will be shocked if you are new to this. *They put that in children's bodies?? What??* Try aluminium, a brain toxin connected to dementia, aborted foetal tissue and formaldehyde which is used to embalm corpses. World-renowned aluminium expert Christopher Exley had his research into the health effect of aluminium in vaccines shut down by Keele University in the UK when it began taking funding from the Bill and Melinda Gates Foundation. Research when diseases 'eradicated' by vaccines began to decline and you will find the fall began long *before* the vaccine was introduced. Sometimes the fall even plateaued after the vaccine. Diseases like scarlet fever for which there was no vaccine declined in the same way because of environmental and other factors. A perfect case in point is the polio vaccine. Polio began when lead arsenate was first sprayed as an insecticide and residues remained in food products. Spraying started in 1892 and the first US polio epidemic came in Vermont in 1894. The simple answer was to stop spraying, but Rockefeller-created Big Pharma had a better idea. Polio was decreed to be caused by the *poliovirus* which 'spreads from person to person and can infect a person's spinal cord'. Lead arsenate was replaced by the lethal DDT which had the same effect of causing paralysis by damaging the brain and central nervous

system. Polio plummeted when DDT was reduced and then banned, but the vaccine is still given the credit for something it didn't do. Today by far the biggest cause of polio is the vaccines promoted by Bill Gates. Vaccine justice campaigner Robert Kennedy Jr, son of assassinated (by the Cult) US Attorney General Robert Kennedy, wrote:

> In 2017, the World Health Organization (WHO) reluctantly admitted that the global explosion in polio is predominantly vaccine strain. The most frightening epidemics in Congo, Afghanistan, and the Philippines, are all linked to vaccines. In fact, by 2018, 70% of global polio cases were vaccine strain.

Vaccines make fortunes for Cult-owned Gates and Big Pharma while undermining the health and immune systems of the population. We had a glimpse of the mentality behind the Big Pharma cartel with a report on WION (World is One News), an international English language TV station based in India, which exposed the extraordinary behaviour of US drug company Pfizer over its 'Covid vaccine'. The WION report told how Pfizer had made fantastic demands of Argentina, Brazil and other countries in return for its 'vaccine'. These included immunity from prosecution, even for Pfizer negligence, government insurance to protect Pfizer from law suits and handing over as collateral sovereign assets of the country to include Argentina's bank reserves, military bases and embassy buildings. Pfizer demanded the same of Brazil in the form of waiving sovereignty of its assets abroad; exempting Pfizer from Brazilian laws; and giving Pfizer immunity from all civil liability. This is a 'vaccine' developed with government funding. Big Pharma is evil incarnate as a creation of the Cult and all must be handed tickets to Nuremberg.

Phantom 'vaccine' for a phantom 'disease'

I'll expose the 'Covid vaccine' fraud and then go on to the wider background of why the Cult has set out to 'vaccinate' every man, woman and child on the planet for an alleged 'new disease' with a survival rate of 99.77 percent (or more) even by the grotesquely-

manipulated figures of the World Health Organization and Johns Hopkins University. The 'infection' to 'death' ratio is 0.23 to 0.15 percent according to Stanford epidemiologist Dr John Ioannidis and while estimates vary the danger remains tiny. I say that if the truth be told the fake infection to fake death ratio is zero. Never mind all the evidence I have presented here and in *The Answer* that there is no 'virus' let us just focus for a moment on that death-rate figure of say 0.23 percent. The figure includes all those worldwide who have tested positive with a test not testing for the 'virus' and then died within 28 days or even longer of any other cause – *any other cause*. Now subtract all those illusory 'Covid' deaths on the global data sheets from the 0.23 percent. What do you think you would be left with? *Zero*. A vaccination has never been successfully developed for a so-called coronavirus. They have all failed at the animal testing stage when they caused hypersensitivity to what they were claiming to protect against and made the impact of a disease far worse. Cult-owned vaccine corporations got around that problem this time by bypassing animal trials, going straight to humans and making the length of the 'trials' before the public rollout as short as they could get away with. Normally it takes five to ten years or more to develop vaccines that still cause demonstrable harm to many people and that's without including the long-term effects that are never officially connected to the vaccination. 'Covid' non-vaccines have been officially produced and approved in a matter of months from a standing start and part of the reason is that (a) they were developed before the 'Covid' hoax began and (b) they are based on computer programs and not natural sources. Official non-trials were so short that government agencies gave *emergency*, not full, approval. 'Trials' were not even completed and full approval cannot be secured until they are. Public 'Covid vaccination' is actually a *continuation of the trial*. Drug company 'trials' are not scheduled to end until 2023 by which time a lot of people are going to be dead. Data on which government agencies gave this emergency approval was supplied by the Big Pharma corporations themselves in the form of Pfizer/BioNTech, AstraZeneca, Moderna, Johnson & Johnson, and

others, and this is the case with all vaccines. By its very nature *emergency* approval means drug companies do not have to prove that the 'vaccine' is 'safe and effective'. How could they with trials way short of complete? Government regulators only have to *believe* that they *could* be safe and effective. It is criminal manipulation to get products in circulation with no testing worth the name. Agencies giving that approval are infested with Big Pharma-connected place-people and they act in the interests of Big Pharma (the Cult) and not the public about whom they do not give a damn.

More human lab rats

'Covid vaccines' produced in record time by Pfizer/BioNTech and Moderna employ a technique *never approved before for use on humans*. They are known as mRNA 'vaccines' and inject a synthetic version of 'viral' mRNA or 'messenger RNA'. The key is in the term 'messenger'. The body works, or doesn't, on the basis of information messaging. Communications are constantly passing between and within the genetic system and the brain. Change those messages and you change the state of the body and even its very nature and you can change psychology and behaviour by the way the brain processes information. I think you are going to see significant changes in personality and perception of many people who have had the 'Covid vaccine' synthetic potions. Insider Aldous Huxley predicted the following in 1961 and mRNA 'vaccines' can be included in the term 'pharmacological methods':

> There will be, in the next generation or so, a pharmacological method of making people love their servitude, and producing dictatorship without tears, so to speak, producing a kind of painless concentration camp for entire societies, so that people will in fact have their own liberties taken away from them, but rather enjoy it, because they will be distracted from any desire to rebel by propaganda or brainwashing, or brainwashing enhanced by pharmacological methods. And this seems to be the final revolution.

Apologists claim that mRNA synthetic 'vaccines' don't change the DNA genetic blueprint because RNA does not affect DNA only the other way round. This is so disingenuous. A process called 'reverse

transcription' can convert RNA into DNA and be integrated into DNA in the cell nucleus. This was highlighted in December, 2020, by scientists at Harvard and Massachusetts Institute of Technology (MIT). Geneticists report that more than 40 percent of mammalian genomes results from reverse transcription. On the most basic level if messaging changes then that sequence must lead to changes in DNA which is receiving and transmitting those communications. How can introducing synthetic material into cells not change the cells where DNA is located? The process is known as transfection which is defined as 'a technique to insert foreign nucleic acid (DNA or RNA) into a cell, typically with the intention of altering the properties of the cell'. Researchers at the Sloan Kettering Institute in New York found that changes in messenger RNA can deactivate tumour-suppressing proteins and thereby promote cancer. This is what happens when you mess with messaging. 'Covid vaccine' maker Moderna was founded in 2010 by Canadian stem cell biologist Derrick J. Rossi after his breakthrough discovery in the field of transforming and reprogramming stem cells. These are neutral cells that can be programmed to become any cell including sperm cells. Moderna was therefore founded on the principle of genetic manipulation and has never produced any vaccine or drug before its genetically-manipulating synthetic 'Covid' shite. Look at the name – Mode-RNA or Modify-RNA. Another important point is that the US Supreme Court has ruled that genetically-modified DNA, or complementary DNA (cDNA) synthesized in the laboratory from messenger RNA, can be patented and owned. These psychopaths are doing this to the human body.

Cells replicate synthetic mRNA in the 'Covid vaccines' and in theory the body is tricked into making antigens which trigger antibodies to target the 'virus spike proteins' which as Dr Tom Cowan said have *never been seen*. Cut the crap and these 'vaccines' deliver *self-replicating* synthetic material to the cells with the effect of changing human DNA. The more of them you have the more that process is compounded while synthetic material is all the time self-replicating. 'Vaccine'-maker Moderna describes mRNA as 'like

software for the cell' and so they are messing with the body's software. What happens when you change the software in a computer? Everything changes. For this reason the Cult is preparing a production line of mRNA 'Covid vaccines' and a long list of excuses to use them as with all the 'variants' of a 'virus' never shown to exist. The plan is further to transfer the mRNA technique to other vaccines mostly given to children and young people. The cumulative consequences will be a transformation of human DNA through a constant infusion of synthetic genetic material which will kill many and change the rest. Now consider that governments that have given emergency approval for a vaccine that's not a vaccine; never been approved for humans before; had no testing worth the name; and the makers have been given immunity from prosecution for any deaths or adverse effects suffered by the public. The UK government awarded *permanent legal indemnity* to itself and its employees for harm done when a patient is being treated for 'Covid-19' or 'suspected Covid-19'. That is quite a thought when these are possible 'side-effects' from the 'vaccine' (they are not 'side', they are effects) listed by the US Food and Drug Administration:

Guillain-Barre syndrome; acute disseminated encephalomyelitis; transverse myelitis; encephalitis; myelitis; encephalomyelitis; meningoencephalitis; meningitis; encephalopathy; convulsions; seizures; stroke; narcolepsy; cataplexy; anaphylaxis; acute myocardial infarction (heart attack); myocarditis; pericarditis; autoimmune disease; death; implications for pregnancy, and birth outcomes; other acute demyelinating diseases; non anaphylactic allergy reactions; thrombocytopenia ; disseminated intravascular coagulation; venous thromboembolism; arthritis; arthralgia; joint pain; Kawasaki disease; multisystem inflammatory syndrome in children; vaccine enhanced disease. The latter is the way the 'vaccine' has the potential to make diseases far worse than they would otherwise be.

UK doctor and freedom campaigner Vernon Coleman described the conditions in this list as 'all unpleasant, most of them very serious, and you can't get more serious than death'. The thought that anyone at all has had the 'vaccine' in these circumstances is testament to the potential that humanity has for clueless, unquestioning, stupidity and for many that programmed stupidity has already been terminal.

An insider speaks

Dr Michael Yeadon is a former Vice President, head of research and Chief Scientific Adviser at vaccine giant Pfizer. Yeadon worked on the inside of Big Pharma, but that did not stop him becoming a vocal critic of 'Covid vaccines' and their potential for multiple harms, including infertility in women. By the spring of 2021 he went much further and even used the no, no, term 'conspiracy'. When you begin to see what is going on it is impossible not to do so. Yeadon spoke out in an interview with freedom campaigner James Delingpole and I mentioned earlier how he said that no one had samples of 'the virus'. He explained that the mRNA technique originated in the anti-cancer field and ways to turn on and off certain genes which could be advantageous if you wanted to stop cancer growing out of control. 'That's the origin of them. They are a very unusual application, really.' Yeadon said that treating a cancer patient with an aggressive procedure might be understandable if the alternative was dying, but it was quite another thing to use the same technique as a public health measure. Most people involved wouldn't catch the infectious agent you were vaccinating against and if they did they probably wouldn't die:

> If you are really using it as a public health measure you really want to as close as you can get to zero sides-effects … I find it odd that they chose techniques that were really cutting their teeth in the field of oncology and I'm worried that in using gene-based vaccines that have to be injected in the body and spread around the body, get taken up into some cells, and the regulators haven't quite told us which cells they get taken up into … you are going to be generating a wide range of responses … with multiple steps each of which could go well or badly.

I doubt the Cult intends it to go well. Yeadon said that you can put any gene you like into the body through the 'vaccine'. 'You can certainly give them a gene that would do them some harm if you wanted.' I was intrigued when he said that when used in the cancer field the technique could turn genes on and off. I explore this process in *The Answer* and with different genes having different functions you could create mayhem – physically and psychologically – if you turned the wrong ones on and the right ones off. I read reports of an experiment by researchers at the University of Washington's school of computer science and engineering in which they encoded DNA to infect computers. The body is itself a biological computer and if human DNA can inflict damage on a computer why can't the computer via synthetic material mess with the human body? It can. The Washington research team said it was possible to insert malicious malware into 'physical DNA strands' and corrupt the computer system of a gene sequencing machine as it 'reads gene letters and stores them as binary digits 0 and 1'. They concluded that hackers could one day use blood or spit samples to access computer systems and obtain sensitive data from police forensics labs or infect genome files. It is at this level of digital interaction that synthetic 'vaccines' need to be seen to get the full picture and that will become very clear later on. Michael Yeadon said it made no sense to give the 'vaccine' to younger people who were in no danger from the 'virus'. What was the benefit? It was all downside with potential effects:

> The fact that my government in what I thought was a civilised, rational country, is raining [the 'vaccine'] on people in their 30s and 40s, even my children in their 20s, they're getting letters and phone calls, I know this is not right and any of you doctors who are vaccinating you know it's not right, too. They are not at risk. They are not at risk from the disease, so you are now hoping that the side-effects are so rare that you get away with it. You don't give new technology … that you don't understand to 100 percent of the population.

Blood clot problems with the AstraZeneca 'vaccine' have been affecting younger people to emphasise the downside risks with no benefit. AstraZeneca's version, produced with Oxford University, does not use mRNA, but still gets its toxic cocktail inside cells where

it targets DNA. The Johnson & Johnson 'vaccine' which uses a similar technique has also produced blood clot effects to such an extent that the United States paused its use at one point. They are all 'gene therapy' (cell modification) procedures and not 'vaccines'. The truth is that once the content of these injections enter cells we have no idea what the effect will be. People can speculate and some can give very educated opinions and that's good. In the end, though, only the makers know what their potions are designed to do and even they won't know every last consequence. Michael Yeadon was scathing about doctors doing what they knew to be wrong. 'Everyone's mute', he said. Doctors in the NHS must know this was not right, coming into work and injecting people. 'I don't know how they sleep at night. I know I couldn't do it. I know that if I were in that position I'd have to quit.' He said he knew enough about toxicology to know this was not a good risk-benefit. Yeadon had spoken to seven or eight university professors and all except two would not speak out publicly. Their universities had a policy that no one said anything that countered the government and its medical advisors. They were afraid of losing their government grants. This is how intimidation has been used to silence the truth at every level of the system. I say silence, but these people could still speak out if they made that choice. Yeadon called them 'moral cowards' – 'This is about your children and grandchildren's lives and you have just buggered off and left it.'

'Variant' nonsense

Some of his most powerful comments related to the alleged 'variants' being used to instil more fear, justify more lockdowns, and introduce more 'vaccines'. He said government claims about 'variants' were nonsense. He had checked the alleged variant 'codes' and they were 99.7 percent identical to the 'original'. This was the human identity difference equivalent to putting a baseball cap on and off or wearing it the other way round. A 0.3 percent difference would make it impossible for that 'variant' to escape immunity from the 'original'. This made no sense of having new 'vaccines' for

'variants'. He said there would have to be at least a *30 percent* difference for that to be justified and even then he believed the immune system would still recognise what it was. Gates-funded 'variant modeller' and 'vaccine'-pusher John Edmunds might care to comment. Yeadon said drug companies were making new versions of the 'vaccine' as a 'top up' for 'variants'. Worse than that, he said, the 'regulators' around the world like the MHRA in the UK had got together and agreed that because 'vaccines' for 'variants' were so similar to the first 'vaccines' *they did not have to do safety studies*. How transparently sinister that is. This is when Yeadon said: 'There is a conspiracy here.' There was no need for another vaccine for 'variants' and yet we were told that there was and the country had shut its borders because of them. 'They are going into hundreds of millions of arms without passing 'go' or any regulator. Why did they do that? Why did they pick this method of making the vaccine?'

The reason had to be something bigger than that it seemed and 'it's not protection against the virus'. It's was a far bigger project that meant politicians and advisers were willing to do things and not do things that knowingly resulted in avoidable deaths – 'that's already happened when you think about lockdown and deprivation of health care for a year.' He spoke of people prepared to do something that results in the avoidable death of their fellow human beings and it not bother them. This is the penny-drop I have been working to get across for more than 30 years – the level of pure evil we are dealing with. Yeadon said his friends and associates could not believe there could be that much evil, but he reminded them of Stalin, Pol Pot and Hitler and of what Stalin had said: 'One death is a tragedy. A million? A statistic.' He could not think of a benign explanation for why you need top-up vaccines 'which I'm sure you don't' and for the regulators 'to just get out of the way and wave them through'. Why would the regulators do that when they were still wrestling with the dangers of the 'parent' vaccine? He was clearly shocked by what he had seen since the 'Covid' hoax began and now he was thinking the previously unthinkable:

If you wanted to depopulate a significant proportion of the world and to do it in a way that doesn't involve destruction of the environment with nuclear weapons, poisoning everyone with anthrax or something like that, and you wanted plausible deniability while you had a multi-year infectious disease crisis, I actually don't think you could come up with a better plan of work than seems to be in front of me. I can't say that's what they are going to do, but I can't think of a benign explanation why they are doing it.

He said he never thought that they would get rid of 99 percent of humans, but now he wondered. 'If you wanted to that this would be a hell of a way to do it – it would be unstoppable folks.' Yeadon had concluded that those who submitted to the 'vaccine' would be allowed to have some kind of normal life (but for how long?) while screws were tightened to coerce and mandate the last few percent. 'I think they'll put the rest of them in a prison camp. I wish I was wrong, but I don't think I am.' Other points he made included: There were no coronavirus vaccines then suddenly they all come along at the same time; we have no idea of the long term affect with trials so short; coercing or forcing people to have medical procedures is against the Nuremberg Code instigated when the Nazis did just that; people should at least delay having the 'vaccine'; a quick Internet search confirms that masks don't reduce respiratory viral transmission and 'the government knows that'; they have smashed civil society and they know that, too; two dozen peer-reviewed studies show no connection between lockdown and reducing deaths; he knew from personal friends the elite were still flying around and going on holiday while the public were locked down; the elite were not having the 'vaccines'. He was also asked if 'vaccines' could be made to target difference races. He said he didn't know, but the document by the Project for the New American Century in September, 2000, said developing 'advanced forms of biological warfare that can target *specific genotypes* may transform biological warfare from the realm of terror to a politically useful tool.' Oh, they're evil all right. Of that we can be *absolutely* sure.

Another cull of old people

We have seen from the CDC definition that the mRNA 'Covid vaccine' is not a vaccine and nor are the others that *claim* to reduce 'severity of symptoms' in *some* people, but not protect from infection or transmission. What about all the lies about returning to 'normal' if people were 'vaccinated'? If they are not claimed to stop infection and transmission of the alleged 'virus', how does anything change? This was all lies to manipulate people to take the jabs and we are seeing that now with masks and distancing still required for the 'vaccinated'. How did they think that elderly people with fragile health and immune responses were going to be affected by infusing their cells with synthetic material and other toxic substances? They *knew* that in the short and long term it would be devastating and fatal as the culling of the old that began with the first lockdowns was continued with the 'vaccine'. Death rates in care homes soared immediately residents began to be 'vaccinated' – infused with synthetic material. Brave and committed whistleblower nurses put their careers at risk by exposing this truth while the rest kept their heads down and their mouths shut to put their careers before those they are supposed to care for. A long-time American Certified Nursing Assistant who gave his name as James posted a video in which he described emotionally what happened in his care home when vaccination began. He said that during 2020 very few residents were sick with 'Covid' and no one died during the entire year; but shortly after the Pfizer mRNA injections 14 people died within two weeks and many others were near death. 'They're dropping like flies', he said. Residents who walked on their own before the shot could no longer and they had lost their ability to conduct an intelligent conversation. The home's management said the sudden deaths were caused by a 'super-spreader' of 'Covid-19'. Then how come, James asked, that residents who refused to take the injections were not sick? It was a case of inject the elderly with mRNA synthetic potions and blame their illness and death that followed on the 'virus'. James described what was happening in care homes as 'the greatest crime of genocide this country has ever seen'. Remember the NHS staff nurse from earlier who used the same

word ‘genocide’ for what was happening with the ‘vaccines’ and that it was an ‘act of human annihilation’. A UK care home whistleblower told a similar story to James about the effect of the ‘vaccine’ in deaths and ‘outbreaks’ of illness dubbed ‘Covid’ after getting the jab. She told how her care home management and staff had zealously imposed government regulations and no one was allowed to even question the official narrative let alone speak out against it. She said the NHS was even worse. Again we see the results of reframing. A worker at a local care home where I live said they had not had a single case of ‘Covid’ there for almost a year and when the residents were ‘vaccinated’ they had 19 positive cases in two weeks with eight dying.

It’s not the ‘vaccine’ – honest

The obvious cause and effect was being ignored by the media and most of the public. Australia’s health minister Greg Hunt (a former head of strategy at the World Economic Forum) was admitted to hospital after he had the ‘vaccine’. He was suffering according to reports from the skin infection ‘cellulitis’ and it must have been a severe case to have warranted days in hospital. Immediately the authorities said this was nothing to do with the ‘vaccine’ when an effect of some vaccines is a ‘cellulitis-like reaction’. We had families of perfectly healthy old people who died after the ‘vaccine’ saying that if only they had been given the ‘vaccine’ earlier they would still be alive. As a numbskull rating that is off the chart. A father of four ‘died of Covid’ at aged 48 when he was taken ill two days after having the ‘vaccine’. The man, a health administrator, had been ‘shielding during the pandemic’ and had ‘not really left the house’ until he went for the ‘vaccine’. Having the ‘vaccine’ and then falling ill and dying does not seem to have qualified as a possible cause and effect and ‘Covid-19’ went on his death certificate. His family said they had no idea how he ‘caught the virus’. A family member said: ‘Tragically, it could be that going for a vaccination ultimately led to him catching Covid …The sad truth is that they are never going to know where it came from.’ The family warned people to remember

that the virus still existed and was 'very real'. So was their stupidity. Nurses and doctors who had the first round of the 'vaccine' were collapsing, dying and ending up in a hospital bed while they or their grieving relatives were saying they'd still have the 'vaccine' again despite what happened. I kid you not. You mean if your husband returned from the dead he'd have the same 'vaccine' again that killed him??

Doctors at the VCU Medical Center in Richmond, Virginia, said the Johnson & Johnson 'vaccine' was to blame for a man's skin peeling off. Patient Richard Terrell said: 'It all just happened so fast. My skin peeled off. It's still coming off on my hands now.' He said it was stinging, burning and itching and when he bent his arms and legs it was very painful with 'the skin swollen and rubbing against itself'. Pfizer/BioNTech and Moderna vaccines use mRNA to change the cell while the Johnson & Johnson version uses DNA in a process similar to AstraZeneca's technique. Johnson & Johnson and AstraZeneca have both had their 'vaccines' paused by many countries after causing serious blood problems. Terrell's doctor Fnu Nutan said he could have died if he hadn't got medical attention. It sounds terrible so what did Nutan and Terrell say about the 'vaccine' now? Oh, they still recommend that people have it. A nurse in a hospital bed 40 minutes after the vaccination and unable to swallow due to throat swelling was told by a doctor that he lost mobility in his arm for 36 hours following the vaccination. What did he say to the ailing nurse? 'Good for you for getting the vaccination.' We are dealing with a serious form of cognitive dissonance madness in both public and medical staff. There is a remarkable correlation between those having the 'vaccine' and trumpeting the fact and suffering bad happenings shortly afterwards. Witold Rogiewicz, a Polish doctor, made a video of his 'vaccination' and ridiculed those who were questioning its safety and the intentions of Bill Gates: 'Vaccinate yourself to protect yourself, your loved ones, friends and also patients. And to mention quickly I have info for anti-vaxxers and anti-Coviders if you want to contact Bill Gates you can do this through me.' He further ridiculed the dangers of 5G. Days later he

was dead, but naturally the vaccination wasn't mentioned in the verdict of 'heart attack'.

Lies, lies and more lies

So many members of the human race have slipped into extreme states of insanity and unfortunately they include reframed doctors and nursing staff. Having a 'vaccine' and dying within minutes or hours is not considered a valid connection while death from any cause within 28 days or longer of a positive test with a test not testing for the 'virus' means 'Covid-19' goes on the death certificate. How could that 'vaccine'-death connection not have been made except by calculated deceit? US figures in the initial rollout period to February 12th, 2020, revealed that a third of the deaths reported to the CDC after 'Covid vaccines' happened within 48 hours. Five men in the UK suffered an 'extremely rare' blood clot problem after having the AstraZeneca 'vaccine', but no causal link was established said the Gates-funded Medicines and Healthcare products Regulatory Agency (MHRA) which had given the 'vaccine' emergency approval to be used. Former Pfizer executive Dr Michael Yeadon explained in his interview how the procedures could cause blood coagulation and clots. People who should have been at no risk were dying from blood clots in the brain and he said he had heard from medical doctor friends that people were suffering from skin bleeding and massive headaches. The AstraZeneca 'shot' was stopped by some 20 countries over the blood clotting issue and still the corrupt MHRA, the European Medicines Agency (EMA) and the World Health Organization said that it should continue to be given even though the EMA admitted that it 'still cannot rule out definitively' a link between blood clotting and the 'vaccine'. Later Marco Cavaleri, head of EMA vaccine strategy, said there was indeed a clear link between the 'vaccine' and thrombosis, but they didn't know why. So much for the trials showing the 'vaccine' is safe. Blood clots were affecting younger people who would be under virtually no danger from 'Covid' even if it existed which makes it all the more stupid and sinister.

The British government responded to public alarm by wheeling out June Raine, the terrifyingly weak infant school headmistress sound-alike who heads the UK MHRA drug 'regulator'. The idea that she would stand up to Big Pharma and government pressure is laughable and she told us that all was well in the same way that she did when allowing untested, never-used-on-humans-before, genetically-manipulating 'vaccines' to be exposed to the public in the first place. Mass lying is the new normal of the 'Covid' era. The MHRA later said 30 cases of rare blood clots had by then been connected with the AstraZeneca 'vaccine' (that means a lot more in reality) while stressing that the benefits of the jab in preventing 'Covid-19' outweighed any risks. A more ridiculous and disingenuous statement with callous disregard for human health it is hard to contemplate. Immediately after the mendacious 'all-clears' two hospital workers in Denmark experienced blood clots and cerebral haemorrhaging following the AstraZeneca jab and one died. Top Norwegian health official Pål Andre Holme said the 'vaccine' was the only common factor: 'There is nothing in the patient history of these individuals that can give such a powerful immune response … I am confident that the antibodies that we have found are the cause, and I see no other explanation than it being the vaccine which triggers it.' Strokes, a clot or bleed in the brain, were clearly associated with the 'vaccine' from word of mouth and whistleblower reports. Similar consequences followed with all these 'vaccines' that we were told were so safe and as the numbers grew by the day it was clear we were witnessing human carnage.

Learning the hard way

A woman interviewed by UKColumn told how her husband suffered dramatic health effects after the vaccine when he'd been in good health all his life. He went from being a little unwell to losing all feeling in his legs and experiencing 'excruciating pain'. Misdiagnosis followed twice at Accident and Emergency (an 'allergy' and 'sciatica') before he was admitted to a neurology ward where doctors said his serious condition had been caused by the

'vaccine'. Another seven 'vaccinated' people were apparently being treated on the same ward for similar symptoms. The woman said he had the 'vaccine' because they believed media claims that it was safe. 'I didn't think the government would give out a vaccine that does this to somebody; I believed they would be bringing out a vaccination that would be safe.' What a tragic way to learn that lesson. Another woman posted that her husband was transporting stroke patients to hospital on almost every shift and when he asked them if they had been 'vaccinated' for 'Covid' they all replied 'yes'. One had a 'massive brain bleed' the day after his second dose. She said her husband reported the 'just been vaccinated' information every time to doctors in A and E only for them to ignore it, make no notes and appear annoyed that it was even mentioned. This particular report cannot be verified, but it expresses a common theme that confirms the monumental underreporting of 'vaccine' consequences. Interestingly as the 'vaccines' and their brain blood clot/stroke consequences began to emerge the UK National Health Service began a publicity campaign telling the public what to do in the event of a stroke. A Scottish NHS staff nurse who quit in disgust in March, 2021, said:

I have seen traumatic injuries from the vaccine, they're not getting reported to the yellow card [adverse reaction] scheme, they're treating the symptoms, not asking why, why it's happening. It's just treating the symptoms and when you speak about it you're dismissed like you're crazy, I'm not crazy, I'm not crazy because every other colleague I've spoken to is terrified to speak out, they've had enough.

Videos appeared on the Internet of people uncontrollably shaking after the 'vaccine' with no control over muscles, limbs and even their face. A Scottish mother broke out in a severe rash all over her body almost immediately after she was given the AstraZeneca 'vaccine'. The pictures were horrific. Leigh King, a 41-year-old hairdresser from Lanarkshire said: 'Never in my life was I prepared for what I was about to experience … My skin was so sore and constantly hot … I have never felt pain like this …' But don't you worry, the 'vaccine' is perfectly safe. Then there has been the effect on medical

staff who have been pressured to have the 'vaccine' by psychopathic 'health' authorities and government. A London hospital consultant who gave the name K. Polyakova wrote this to the *British Medical Journal* or *BMJ*:

> I am currently struggling with … the failure to report the reality of the morbidity caused by our current vaccination program within the health service and staff population. The levels of sickness after vaccination is unprecedented and staff are getting very sick and some with neurological symptoms which is having a huge impact on the health service function. Even the young and healthy are off for days, some for weeks, and some requiring medical treatment. Whole teams are being taken out as they went to get vaccinated together.
>
> Mandatory vaccination in this instance is stupid, unethical and irresponsible when it comes to protecting our staff and public health. We are in the voluntary phase of vaccination, and encouraging staff to take an unlicensed product that is impacting on their immediate health … it is clearly stated that these vaccine products do not offer immunity or stop transmission. In which case why are we doing it?

Not to protect health that's for sure. Medical workers are lauded by governments for agenda reasons when they couldn't give a toss about them any more than they can for the population in general. Schools across America faced the same situation as they closed due to the high number of teachers and other staff with bad reactions to the Pfizer/BioNTech, Moderna, and Johnson & Johnson 'Covid vaccines' all of which were linked to death and serious adverse effects. The *BMJ* took down the consultant's comments pretty quickly on the grounds that they were being used to spread 'disinformation'. They were exposing the truth about the 'vaccine' was the real reason. The cover-up is breathtaking.

Hiding the evidence

The scale of the 'vaccine' death cover-up worldwide can be confirmed by comparing official figures with the personal experience of the public. I heard of many people in my community who died immediately or soon after the vaccine that would never appear in the media or even likely on the official totals of 'vaccine' fatalities and adverse reactions when only about ten percent are estimated to be

reported and I have seen some estimates as low as one percent in a Harvard study. In the UK alone by April 29th, 2021, some 757,654 adverse reactions had been officially reported from the Pfizer/BioNTech, Oxford/AstraZeneca and Moderna 'vaccines' with more than a thousand deaths linked to jabs and that means an estimated ten times this number in reality from a ten percent reporting rate percentage. That's seven million adverse reactions and 10,000 potential deaths and a one percent reporting rate would be ten times *those* figures. In 1976 the US government pulled the swine flu vaccine after *53* deaths. The UK data included a combined 10,000 eye disorders from the 'Covid vaccines' with more than 750 suffering visual impairment or blindness and again multiply by the estimated reporting percentages. As 'Covid cases' officially fell hospitals virtually empty during the 'Covid crisis' began to fill up with a range of other problems in the wake of the 'vaccine' rollout. The numbers across America have also been catastrophic. Deaths linked to *all* types of vaccine increased by *6,000 percent* in the first quarter of 2021 compared with 2020. A 39-year-old woman from Ogden, Utah, died four days after receiving a second dose of Moderna's 'Covid vaccine' when her liver, heart and kidneys all failed despite the fact that she had no known medical issues or conditions. Her family sought an autopsy, but Dr Erik Christensen, Utah's chief medical examiner, said proving vaccine injury as a cause of death almost never happened. He could think of only one instance where an autopsy would name a vaccine as the official cause of death and that would be anaphylaxis where someone received a vaccine and died almost instantaneously. 'Short of that, it would be difficult for us to definitively say this is the vaccine,' Christensen said. If that is true this must be added to the estimated ten percent (or far less) reporting rate of vaccine deaths and serious reactions and the conclusion can only be that vaccine deaths and serious reactions – including these 'Covid' potions' – are phenomenally understated in official figures. The same story can be found everywhere. Endless accounts of deaths and serious reactions among the public, medical

and care home staff while official figures did not even begin to reflect this.

Professional script-reader Dr David Williams, a 'top public-health official' in Ontario, Canada, insulted our intelligence by claiming only four serious adverse reactions and no deaths from the more than 380,000 vaccine doses then given. This bore no resemblance to what people knew had happened in their owns circles and we had Dirk Huyer in charge of getting millions vaccinated in Ontario while at the same time he was Chief Coroner for the province investigating causes of death including possible death from the vaccine. An aide said he had stepped back from investigating deaths, but evidence indicated otherwise. Rosemary Frei, who secured a Master of Science degree in molecular biology at the Faculty of Medicine at Canada's University of Calgary before turning to investigative journalism, was one who could see that official figures for 'vaccine' deaths and reactions made no sense. She said that doctors seldom reported adverse events and when people got really sick or died after getting a vaccination they would attribute that to anything except the vaccines. It had been that way for years and anyone who wondered aloud whether the 'Covid vaccines' or other shots cause harm is immediately branded as 'anti-vax' and 'anti-science'. This was 'career-threatening' for health professionals. Then there was the huge pressure to support the push to 'vaccinate' billions in the quickest time possible. Frei said:

> So that's where we're at today. More than half a million vaccine doses have been given to people in Ontario alone. The rush is on to vaccinate all 15 million of us in the province by September. And the mainstream media are screaming for this to be sped up even more. That all adds up to only a very slim likelihood that we're going to be told the truth by officials about how many people are getting sick or dying from the vaccines.

What is true of Ontario is true of everywhere.

They KNEW – and still did it

The authorities knew what was going to happen with multiple deaths and adverse reactions. The UK government's Gates-funded

and Big Pharma-dominated Medicines and Healthcare products Regulatory Agency (MHRA) hired a company to employ AI in compiling the projected reactions to the 'vaccine' that would otherwise be uncountable. The request for applications said: 'The MHRA urgently seeks an Artificial Intelligence (AI) software tool to process the expected high volume of Covid-19 vaccine Adverse Drug Reaction …' This was from the agency, headed by the disingenuous June Raine, that gave the 'vaccines' emergency approval and the company was hired before the first shot was given. 'We are going to kill and maim you – is that okay?' 'Oh, yes, perfectly fine – I'm very grateful, thank you, doctor.' The range of 'Covid vaccine' adverse reactions goes on for page after page in the MHRA criminally underreported 'Yellow Card' system and includes affects to eyes, ears, skin, digestion, blood and so on. Raine's MHRA amazingly claimed that the 'overall safety experience … is so far as expected from the clinical trials'. The death, serious adverse effects, deafness and blindness were *expected?* When did they ever mention that? If these human tragedies were expected then those that gave approval for the use of these 'vaccines' must be guilty of crimes against humanity including murder – a definition of which is 'killing a person with malice aforethought or with recklessness manifesting extreme indifference to the value of human life.' People involved at the MHRA, the CDC in America and their equivalent around the world must go before Nuremberg trials to answer for their callous inhumanity. We are only talking here about the immediate effects of the 'vaccine'. The longer-term impact of the DNA synthetic manipulation is the main reason they are so hysterically desperate to inoculate the entire global population in the shortest possible time.

Africa and the developing world are a major focus for the 'vaccine' depopulation agenda and a mass vaccination sales-pitch is underway thanks to caring people like the Rockefellers and other Cult assets. The Rockefeller Foundation, which pre-empted the 'Covid pandemic' in a document published in 2010 that 'predicted' what happened a decade later, announced an initial $34.95 million grant in February, 2021, 'to ensure more equitable access to Covid-19

testing and vaccines' among other things in Africa in collaboration with '24 organizations, businesses, and government agencies'. The pan-Africa initiative would focus on 10 countries: Burkina Faso, Ethiopia, Ghana, Kenya, Nigeria, Rwanda, South Africa, Tanzania, Uganda, and Zambia'. Rajiv Shah, President of the Rockefeller Foundation and former administrator of CIA-controlled USAID, said that if Africa was not mass-vaccinated (to change the DNA of its people) it was a 'threat to all of humanity' and not fair on Africans. When someone from the Rockefeller Foundation says they want to do something to help poor and deprived people and countries it is time for a belly-laugh. They are doing this out of the goodness of their 'heart' because 'vaccinating' the entire global population is what the 'Covid' hoax set out to achieve. Official 'decolonisation' of Africa by the Cult was merely a prelude to financial colonisation on the road to a return to physical colonisation. The 'vaccine' is vital to that and the sudden and convenient death of the 'Covid' sceptic president of Tanzania can be seen in its true light. A lot of people in Africa are aware that this is another form of colonisation and exploitation and they need to stand their ground.

The 'vaccine is working' scam

A potential problem for the Cult was that the 'vaccine' is meant to change human DNA and body messaging and not to protect anyone from a 'virus' never shown to exist. The vaccine couldn't work because it was not designed to work and how could they make it *appear* to be working so that more people would have it? This was overcome by lowering the amplification rate of the PCR test to produce fewer 'cases' and therefore fewer 'deaths'. Some of us had been pointing out since March, 2020, that the amplification rate of the test not testing for the 'virus' had been made artificially high to generate positive tests which they could call 'cases' to justify lockdowns. The World Health Organization recommended an absurdly high 45 amplification cycles to ensure the high positives required by the Cult and then remained silent on the issue until January 20th, 2021 – Biden's Inauguration Day. This was when the

'vaccinations' were seriously underway and on that day the WHO recommended after discussions with America's CDC that laboratories *lowered their testing amplification*. Dr David Samadi, a certified urologist and health writer, said the WHO was encouraging all labs to reduce their cycle count for PCR tests. He said the current cycle was much too high and was 'resulting in any particle being declared a positive case'. Even one mainstream news report I saw said this meant the number of 'Covid' infections may have been 'dramatically inflated'. Oh, just a little bit. The CDC in America issued new guidance to laboratories in April, 2021, to use 28 cycles *but only for 'vaccinated' people*. The timing of the CDC/WHO interventions were cynically designed to make it appear the 'vaccines' were responsible for falling cases and deaths when the real reason can be seen in the following examples. New York's state lab, the Wadsworth Center, identified 872 positive tests in July, 2020, based on a threshold of 40 cycles. When the figure was lowered to 35 cycles *43 percent* of the 872 were no longer 'positives'. At 30 cycles the figure was 63 percent. A Massachusetts lab found that between *85 to 90 percent* of people who tested positive in July with a cycle threshold of 40 would be negative at 30 cycles, Ashish Jha, MD, director of the Harvard Global Health Institute, said: 'I'm really shocked that it could be that high … Boy, does it really change the way we need to be thinking about testing.' I'm shocked that I could see the obvious in the spring of 2020, with no medical background, and most medical professionals still haven't worked it out. No, that's not shocking – it's terrifying.

Three weeks after the WHO directive to lower PCR cycles the London *Daily Mail* ran this headline: 'Why ARE Covid cases plummeting? New infections have fallen 45% in the US and 30% globally in the past 3 weeks but experts say vaccine is NOT the main driver because only 8% of Americans and 13% of people worldwide have received their first dose.' They acknowledged that the drop could not be attributed to the 'vaccine', but soon this morphed throughout the media into the 'vaccine' has caused cases and deaths to fall when it was the PCR threshold. In December, 2020, there was

chaos at English Channel ports with truck drivers needing negative 'Covid' tests before they could board a ferry home for Christmas. The government wanted to remove the backlog as fast as possible and they brought in troops to do the 'testing'. Out of 1,600 drivers just *36* tested positive and the rest were given the all clear to cross the Channel. I guess the authorities thought that 36 was the least they could get away with without the unquestioning catching on. The amplification trick which most people believed in the absence of information in the mainstream applied more pressure on those refusing the 'vaccine' to succumb when it 'obviously worked'. The truth was the exact opposite with deaths in care homes soaring with the 'vaccine' and in Israel the term used was 'skyrocket'. A re-analysis of published data from the Israeli Health Ministry led by Dr Hervé Seligmann at the Medicine Emerging Infectious and Tropical Diseases at Aix-Marseille University found that Pfizer's 'Covid vaccine' killed 'about 40 times more [elderly] people than the disease itself would have killed' during a five-week vaccination period and *260 times* more younger people than would have died from the 'virus' even according to the manipulated 'virus' figures. Dr Seligmann and his co-study author, Haim Yativ, declared after reviewing the Israeli 'vaccine' death data: 'This is a new Holocaust.'

Then, in mid-April, 2021, after vast numbers of people worldwide had been 'vaccinated', the story changed with clear coordination. The UK government began to prepare the ground for more future lockdowns when Nuremberg-destined Boris Johnson told yet another whopper. He said that cases had fallen because of *lockdowns* not 'vaccines'. Lockdowns are irrelevant when *there is no 'virus'* and the test and fraudulent death certificates are deciding the number of 'cases' and 'deaths'. Study after study has shown that lockdowns don't work and instead kill and psychologically destroy people. Meanwhile in the United States Anthony Fauci and Rochelle Walensky, the ultra-Zionist head of the CDC, peddled the same line. More lockdown was the answer and not the 'vaccine', a line repeated on cue by the moron that is Canadian Prime Minister Justin Trudeau. Why all the hysteria to get everyone 'vaccinated' if lockdowns and

not 'vaccines' made the difference? None of it makes sense on the face of it. Oh, but it does. The Cult wants lockdowns *and* the 'vaccine' and if the 'vaccine' is allowed to be seen as the total answer lockdowns would no longer be justified when there are still livelihoods to destroy. 'Variants' and renewed upward manipulation of PCR amplification are planned to instigate never-ending lockdown *and* more 'vaccines'.

You *must* have it – we're desperate

Israel, where the Jewish and Arab population are ruled by the Sabbatian Cult, was the front-runner in imposing the DNA-manipulating 'vaccine' on its people to such an extent that Jewish refusers began to liken what was happening to the early years of Nazi Germany. This would seem to be a fantastic claim. Why would a government of Jewish people be acting like the Nazis did? If you realise that the Sabbatian Cult was behind the Nazis and that Sabbatians hate Jews the pieces start to fit and the question of why a 'Jewish' government would treat Jews with such callous disregard for their lives and freedom finds an answer. Those controlling the government of Israel *aren't Jewish* – they're Sabbatian. Israeli lawyer Tamir Turgal was one who made the Nazi comparison in comments to German lawyer Reiner Fuellmich who is leading a class action lawsuit against the psychopaths for crimes against humanity. Turgal described how the Israeli government was vaccinating children and pregnant women on the basis that there was no evidence that this was dangerous when they had no evidence that it *wasn't* dangerous either. They just had no evidence. This was medical experimentation and Turgal said this breached the Nuremberg Code about medical experimentation and procedures requiring informed consent and choice. Think about that. A Nuremberg Code developed because of Nazi experimentation on Jews and others in concentration camps by people like the evil-beyond-belief Josef Mengele is being breached by the *Israeli* government; but when you know that it's a *Sabbatian* government along with its intelligence and military agencies like Mossad, Shin Bet and the Israeli Defense Forces, and that Sabbatians

were the force behind the Nazis, the kaleidoscope comes into focus. What have we come to when Israeli Jews are suing their government for violating the Nuremberg Code by essentially making Israelis subject to a medical experiment using the controversial 'vaccines'? It's a shocker that this has to be done in the light of what happened in Nazi Germany. The Anshe Ha-Emet, or 'People of the Truth', made up of Israeli doctors, lawyers, campaigners and public, have launched a lawsuit with the International Criminal Court. It says:

> When the heads of the Ministry of Health as well as the prime minister presented the vaccine in Israel and began the vaccination of Israeli residents, the vaccinated were not advised, that, in practice, they are taking part in a medical experiment and that their consent is required for this under the Nuremberg Code.

The irony is unbelievable, but easily explained in one word: Sabbatians. The foundation of Israeli 'Covid' apartheid is the 'green pass' or 'green passport' which allows Jews and Arabs who have had the DNA-manipulating 'vaccine' to go about their lives – to work, fly, travel in general, go to shopping malls, bars, restaurants, hotels, concerts, gyms, swimming pools, theatres and sports venues, while non-'vaccinated' are banned from all those places and activities. Israelis have likened the 'green pass' to the yellow stars that Jews in Nazi Germany were forced to wear – the same as the yellow stickers that a branch of UK supermarket chain Morrisons told exempt mask-wears they had to display when shopping. How very sensitive. The Israeli system is blatant South African-style apartheid on the basis of compliance or non-compliance to fascism rather than colour of the skin. How appropriate that the Sabbatian Israeli government was so close to the pre-Mandela apartheid regime in Pretoria. The Sabbatian-instigated 'vaccine passport' in Israel is planned for everywhere. Sabbatians struck a deal with Pfizer that allowed them to lead the way in the percentage of a national population infused with synthetic material and the result was catastrophic. Israeli freedom activist Shai Dannon told me how chairs were appearing on beaches that said 'vaccinated only'. Health Minister Yuli Edelstein said that anyone unwilling or unable to get

the jabs that 'confer immunity' will be 'left behind'. The man's a liar. Not even the makers claim the 'vaccines' confer immunity. When you see those figures of 'vaccine' deaths these psychopaths were saying that you must take the chance the 'vaccine' will kill you or maim you while knowing it will change your DNA or lockdown for you will be permanent. That's fascism. The Israeli parliament passed a law to allow personal information of the non-vaccinated to be shared with local and national authorities for three months. This was claimed by its supporters to be a way to 'encourage' people to be vaccinated. Hadas Ziv from Physicians for Human Rights described this as a 'draconian law which crushed medical ethics and the patient rights'. But that's the idea, the Sabbatians would reply.

Your papers, please

Sabbatian Israel was leading what has been planned all along to be a global 'vaccine pass' called a 'green passport' without which you would remain in permanent lockdown restriction and unable to do anything. This is how badly – *desperately* – the Cult is to get everyone 'vaccinated'. The term and colour 'green' was not by chance and related to the psychology of fusing the perception of the green climate hoax with the 'Covid' hoax and how the 'solution' to both is the same Great Reset. Lying politicians, health officials and psychologists denied there were any plans for mandatory vaccinations or restrictions based on vaccinations, but they knew that was exactly what was meant to happen with governments of all countries reaching agreements to enforce a global system. 'Free' Denmark and 'free' Sweden unveiled digital vaccine certification. Cyprus, Czech Republic, Estonia, Greece, Hungary, Iceland, Italy, Poland, Portugal, Slovakia, and Spain have all committed to a vaccine passport system and the rest including the whole of the EU would follow. The satanic UK government will certainly go this way despite mendacious denials and at the time of writing it is trying to manipulate the public into having the 'vaccine' so they could go abroad on a summer holiday. How would that work without something to prove you had the synthetic toxicity injected into you?

Documents show that the EU's European Commission was moving towards 'vaccine certificates' in 2018 and 2019 before the 'Covid' hoax began. They knew what was coming. Abracadabra – Ursula von der Leyen, the German President of the Commission, announced in March, 2021, an EU 'Digital Green Certificate' – green again – to track the public's 'Covid status'. The passport sting is worldwide and the Far East followed the same pattern with South Korea ruling that only those with 'vaccination' passports – again the *green* pass – would be able to 'return to their daily lives'.

Bill Gates has been preparing for this 'passport' with other Cult operatives for years and beyond the paper version is a Gates-funded 'digital tattoo' to identify who has been vaccinated and who hasn't. The 'tattoo' is reported to include a substance which is externally readable to confirm who has been vaccinated. This is a bio-luminous light-generating enzyme (think fireflies) called … *Luciferase*. Yes, named after the Cult 'god' Lucifer the 'light bringer' of whom more to come. Gates said he funded the readable tattoo to ensure children in the developing world were vaccinated and no one was missed out. He cares so much about poor kids as we know. This was just the cover story to develop a vaccine tagging system for everyone on the planet. Gates has been funding the ID2020 'alliance' to do just that in league with other lovely people at Microsoft, GAVI, the Rockefeller Foundation, Accenture and IDEO.org. He said in interviews in March, 2020, before any 'vaccine' publicly existed, that the world must have a globalised digital certificate to track the 'virus' and who had been vaccinated. Gates knew from the start that the mRNA vaccines were coming and when they would come and that the plan was to tag the 'vaccinated' to marginalise the intelligent and stop them doing anything including travel. Evil just doesn't suffice. Gates was exposed for offering a $10 million bribe to the Nigerian House of Representatives to invoke compulsory 'Covid' vaccination of all Nigerians. Sara Cunial, a member of the Italian Parliament, called Gates a 'vaccine criminal'. She urged the Italian President to hand him over to the International Criminal Court for crimes against

humanity and condemned his plans to 'chip the human race' through ID2020.

You know it's a long-planned agenda when war criminal and Cult gofer Tony Blair is on the case. With the scale of arrogance only someone as dark as Blair can muster he said: 'Vaccination in the end is going to be your route to liberty.' Blair is a disgusting piece of work and he confirms that again. The media has given a lot of coverage to a bloke called Charlie Mullins, founder of London's biggest independent plumbing company, Pimlico Plumbers, who has said he won't employ anyone who has not been vaccinated or have them go to any home where people are not vaccinated. He said that if he had his way no one would be allowed to walk the streets if they have not been vaccinated. Gates was cheering at the time while I was alerting the white coats. The plan is that people will qualify for 'passports' for having the first two doses and then to keep it they will have to have all the follow ups and new ones for invented 'variants' until human genetics is transformed and many are dead who can't adjust to the changes. Hollywood celebrities – the usual propaganda stunt – are promoting something called the WELL Health-Safety Rating to verify that a building or space has 'taken the necessary steps to prioritize the health and safety of their staff, visitors and other stakeholders'. They included Lady Gaga, Jennifer Lopez, Michael B. Jordan, Robert DeNiro, Venus Williams, Wolfgang Puck, Deepak Chopra and 17th Surgeon General Richard Carmona. Yawn. WELL Health-Safety has big connections with China. Parent company Delos is headed by former Goldman Sachs partner Paul Scialla. This is another example – and we will see so many others – of using the excuse of 'health' to dictate the lives and activities of the population. I guess one confirmation of the 'safety' of buildings is that only 'vaccinated' people can go in, right?

Electronic concentration camps

I wrote decades ago about the plans to restrict travel and here we are for those who refuse to bow to tyranny. This can be achieved in one go with air travel if the aviation industry makes a blanket decree.

The ‘vaccine’ and guaranteed income are designed to be part of a global version of China’s social credit system which tracks behaviour 24/7 and awards or deletes ‘credits’ based on whether your behaviour is supported by the state or not. I mean your entire lifestyle – what you do, eat, say, everything. Once your credit score falls below a certain level consequences kick in. In China tens of millions have been denied travel by air and train because of this. All the locations and activities denied to refusers by the ‘vaccine’ passports will be included in one big mass ban on doing almost anything for those that don’t bow their head to government. It’s beyond fascist and a new term is required to describe its extremes – I guess fascist technocracy will have to do. The way the Chinese system of technological – technocratic – control is sweeping the West can be seen in the Los Angeles school system and is planned to be expanded worldwide. Every child is required to have a ‘Covid’-tracking app scanned daily before they can enter the classroom. The so-called Daily Pass tracking system is produced by Gates’ Microsoft which I’m sure will shock you rigid. The pass will be scanned using a barcode (one step from an inside-the-body barcode) and the information will include health checks, ‘Covid’ tests and vaccinations. Entry codes are for one specific building only and access will only be allowed if a student or teacher has a negative test with a test not testing for the ‘virus’, has no symptoms of anything alleged to be related to ‘Covid’ (symptoms from a range of other illness), and has a temperature under 100 degrees. No barcode, no entry, is planned to be the case for everywhere and not only schools.

Kids are being psychologically prepared to accept this as ‘normal’ their whole life which is why what they can impose in schools is so important to the Cult and its gofers. Long-time American freedom campaigner John Whitehead of the Rutherford Institute was not exaggerating when he said: ‘Databit by databit, we are building our own electronic concentration camps.’ Canada under its Cult gofer prime minister Justin Trudeau has taken a major step towards the real thing with people interned against their will if they test positive with a test not testing for the ‘virus’ when they arrive at a Canadian

airport. They are jailed in internment hotels often without food or water for long periods and with many doors failing to lock there have been sexual assaults. The interned are being charged sometimes $2,000 for the privilege of being abused in this way. Trudeau is fully on board with the Cult and says the 'Covid pandemic' has provided an opportunity for a global 'reset' to permanently change Western civilisation. His number two, Deputy Prime Minister Chrystia Freeland, is a trustee of the World Economic Forum and a Rhodes Scholar. The Trudeau family have long been servants of the Cult. See *The Biggest Secret* and Cathy O'Brien's book *Trance-Formation of America* for the horrific background to Trudeau's father Pierre Trudeau another Canadian prime minister. Hide your fascism behind the façade of a heart-on-the-sleeve liberal. It's a well-honed Cult technique.

What can the 'vaccine' *really* do?

We have a 'virus' never shown to exist and 'variants' of the 'virus' that have also never been shown to exist except, like the 'original', as computer-generated fictions. Even if you believe there's a 'virus' the 'case' to 'death' rate is in the region of 0.23 to 0.15 percent and those 'deaths' are concentrated among the very old around the same average age that people die anyway. In response to this lack of threat (in truth none) psychopaths and idiots, knowingly and unknowingly answering to Gates and the Cult, are seeking to 'vaccinate' every man, woman and child on Planet Earth. Clearly the 'vaccine' is not about 'Covid' – none of this ever has been. So what is it all about *really*? Why the desperation to infuse genetically-manipulating synthetic material into everyone through mRNA fraudulent 'vaccines' with the intent of doing this over and over with the excuses of 'variants' and other 'virus' inventions? Dr Sherri Tenpenny, an osteopathic medical doctor in the United States, has made herself an expert on vaccines and their effects as a vehement campaigner against their use. Tenpenny was board certified in emergency medicine, the director of a level two trauma centre for 12 years, and moved to Cleveland in 1996 to start an integrative

medicine practice which has treated patients from all 50 states and some 17 other countries. Weaning people off pharmaceutical drugs is a speciality.

She became interested in the consequences of vaccines after attending a meeting at the National Vaccine Information Center in Washington DC in 2000 where she 'sat through four days of listening to medical doctors and scientists and lawyers and parents of vaccine injured kids' and asked: 'What's going on?' She had never been vaccinated and never got ill while her father was given a list of vaccines to be in the military and was 'sick his entire life'. The experience added to her questions and she began to examine vaccine documents from the Centers for Disease Control (CDC). After reading the first one, the 1998 version of *The General Recommendations of Vaccination*, she thought: 'This is it?' The document was poorly written and bad science and Tenpenny began 20 years of research into vaccines that continues to this day. She began her research into 'Covid vaccines' in March, 2020, and she describes them as 'deadly'. For many, as we have seen, they already have been. Tenpenny said that in the first 30 days of the 'vaccine' rollout in the United States there had been more than 40,000 adverse events reported to the vaccine adverse event database. A document had been delivered to her the day before that was 172 pages long. 'We have over 40,000 adverse events; we have over 3,100 cases of [potentially deadly] anaphylactic shock; we have over 5,000 neurological reactions.' Effects ranged from headaches to numbness, dizziness and vertigo, to losing feeling in hands or feet and paraesthesia which is when limbs 'fall asleep' and people have the sensation of insects crawling underneath their skin. All this happened in the first 30 days and remember that only about *ten percent* (or far less) of adverse reactions and vaccine-related deaths are estimated to be officially reported. Tenpenny said:

> So can you think of one single product in any industry, any industry, for as long as products have been made on the planet that within 30 days we have 40,000 people complaining of side effects that not only is still on the market but … we've got paid actors telling us how great

they are for getting their vaccine. We're offering people $500 if they will just get their vaccine and we've got nurses and doctors going; 'I got the vaccine, I got the vaccine'.

Tenpenny said they were not going to be 'happy dancing folks' when they began to suffer Bell's palsy (facial paralysis), neuropathies, cardiac arrhythmias and autoimmune reactions that kill through a blood disorder. 'They're not going to be so happy, happy then, but we're never going to see pictures of those people' she said. Tenpenny described the 'vaccine' as 'a well-designed killing tool'.

No off-switch

Bad as the initial consequences had been Tenpenny said it would be maybe 14 months before we began to see the 'full ravage' of what is going to happen to the 'Covid vaccinated' with full-out consequences taking anything between two years and 20 years to show. You can understand why when you consider that variations of the 'Covid vaccine' use mRNA (messenger RNA) to in theory activate the immune system to produce protective antibodies without using the actual 'virus'. How can they when it's a computer program and they've never isolated what they claim is the 'real thing'? Instead they use *synthetic* mRNA. They are inoculating synthetic material into the body which through a technique known as the Trojan horse is absorbed into cells to change the nature of DNA. Human DNA is changed by an infusion of messenger RNA and with each new 'vaccine' of this type it is changed even more. Say so and you are banned by Cult Internet platforms. The contempt the contemptuous Mark Zuckerberg has for the truth and human health can be seen in an internal Facebook video leaked to the Project Veritas investigative team in which he said of the 'Covid vaccines': '… I share some caution on this because we just don't know the long term side-effects of basically modifying people's DNA and RNA.' At the same time this disgusting man's Facebook was censoring and banning anyone saying exactly the same. He must go before a Nuremberg trial for crimes against humanity when he *knows* that he

is censoring legitimate concerns and denying the right of informed consent on behalf of the Cult that owns him. People have been killed and damaged by the very 'vaccination' technique he cast doubt on himself when they may not have had the 'vaccine' with access to information that he denied them. The plan is to have at least annual 'Covid vaccinations', add others to deal with invented 'variants', and change all other vaccines into the mRNA system. Pfizer executives told shareholders at a virtual Barclays Global Healthcare Conference in March, 2021, that the public may need a third dose of 'Covid vaccine', plus regular yearly boosters and the company planned to hike prices to milk the profits in a 'significant opportunity for our vaccine'. These are the professional liars, cheats and opportunists who are telling you their 'vaccine' is safe. Given this volume of mRNA planned to be infused into the human body and its ability to then replicate we will have a transformation of human genetics from biological to synthetic biological – exactly the long-time Cult plan for reasons we'll see – and many will die. Sherri Tenpenny said of this replication:

> It's like having an on-button but no off-button and that whole mechanism … they actually give it a name and they call it the Trojan horse mechanism, because it allows that [synthetic] virus and that piece of that [synthetic] virus to get inside of your cells, start to replicate and even get inserted into other parts of your DNA as a Trojan-horse.

Ask the overwhelming majority of people who have the 'vaccine' what they know about the contents and what they do and they would reply: 'The government says it will stop me getting the virus.' Governments give that false impression on purpose to increase take-up. You can read Sherri Tenpenny's detailed analysis of the health consequences in her blog at Vaxxter.com, but in summary these are some of them. She highlights the statement by Bill Gates about how human beings can become their own 'vaccine manufacturing machine'. The man is insane. ['Vaccine'-generated] 'antibodies' carry synthetic messenger RNA into the cells and the damage starts, Tenpenny contends, and she says that lungs can be adversely affected through varying degrees of pus and bleeding which

obviously affects breathing and would be dubbed 'Covid-19'. Even more sinister was the impact of 'antibodies' on macrophages, a white blood cell of the immune system. They consist of Type 1 and Type 2 which have very different functions. She said Type 1 are 'hyper-vigilant' white blood cells which 'gobble up' bacteria etc. However, in doing so, this could cause inflammation and in extreme circumstances be fatal. She says these affects are mitigated by Type 2 macrophages which kick in to calm down the system and stop it going rogue. They clear up dead tissue debris and reduce inflammation that the Type 1 'fire crews' have caused. Type 1 kills the infection and Type 2 heals the damage, she says. This is her punchline with regard to 'Covid vaccinations': She says that mRNA 'antibodies' block Type 2 macrophages by attaching to them and deactivating them. This meant that when the Type 1 response was triggered by infection there was nothing to stop that getting out of hand by calming everything down. There's an on-switch, but no off-switch, she says. What follows can be 'over and out, see you when I see you'.

Genetic suicide

Tenpenny also highlights the potential for autoimmune disease – the body attacking itself – which has been associated with vaccines since they first appeared. Infusing a synthetic foreign substance into cells could cause the immune system to react in a panic believing that the body is being overwhelmed by an invader (it is) and the consequences can again be fatal. There is an autoimmune response known as a 'cytokine storm' which I have likened to a homeowner panicked by an intruder and picking up a gun to shoot randomly in all directions before turning the fire on himself. The immune system unleashes a storm of inflammatory response called cytokines to a threat and the body commits hara-kiri. The lesson is that you mess with the body's immune response at your peril and these 'vaccines' seriously – fundamentally – mess with immune response. Tenpenny refers to a consequence called anaphylactic shock which is a severe and highly dangerous allergic reaction when the immune system

floods the body with chemicals. She gives the example of having a bee sting which primes the immune system and makes it sensitive to those chemicals. When people are stung again maybe years later the immune response can be so powerful that it leads to anaphylactic shock. Tenpenny relates this 'shock' with regard to the 'Covid vaccine' to something called polyethylene glycol or PEG. Enormous numbers of people have become sensitive to this over decades of use in a whole range of products and processes including food, drink, skin creams and 'medicine'. Studies have claimed that some 72 percent of people have antibodies triggered by PEG compared with two percent in the 1960s and allergic hypersensitive reactions to this become a gathering cause for concern. Tenpenny points out that the 'mRNA vaccine' is coated in a 'bubble' of polyethylene glycol which has the potential to cause anaphylactic shock through immune sensitivity. Many reports have appeared of people reacting this way after having the 'Covid vaccine'. What do we think is going to happen as humanity has more and more of these 'vaccines'? Tenpenny said: 'All these pictures we have seen with people with these rashes … these weepy rashes, big reactions on their arms and things like that – it's an acute allergic reaction most likely to the polyethylene glycol that you've been previously primed and sensitised to.'

Those who have not studied the conspiracy and its perpetrators at length might think that making the population sensitive to PEG and then putting it in these 'vaccines' is just a coincidence. It is not. It is instead testament to how carefully and coldly-planned current events have been and the scale of the conspiracy we are dealing with. Tenpenny further explains that the 'vaccine' mRNA procedure can breach the blood-brain barrier which protects the brain from toxins and other crap that will cause malfunction. In this case they could make two proteins corrupt brain function to cause Amyotrophic lateral sclerosis (ALS) , a progressive nervous system disease leading to loss of muscle control, and frontal lobe degeneration – Alzheimer's and dementia. Immunologist J. Bart Classon published a paper connecting mRNA 'vaccines' to prion

disease which can lead to Alzheimer's and other forms of neurogenerative disease while others have pointed out the potential to affect the placenta in ways that make women infertile. This will become highly significant in the next chapter when I will discuss other aspects of this non-vaccine that relate to its nanotechnology and transmission from the injected to the uninjected.

Qualified in idiocy

Tenpenny describes how research has confirmed that these 'vaccine'-generated antibodies can interact with a range of other tissues in the body and attack many other organs including the lungs. 'This means that if you have a hundred people standing in front of you that all got this shot they could have a hundred different symptoms.' Anyone really think that Cult gofers like the Queen, Tony Blair, Christopher Whitty, Anthony Fauci, and all the other psychopaths have really had this 'vaccine' in the pictures we've seen? Not a bloody chance. Why don't doctors all tell us about all these dangers and consequences of the 'Covid vaccine'? Why instead do they encourage and pressure patients to have the shot? Don't let's think for a moment that doctors and medical staff can't be stupid, lazy, and psychopathic and that's without the financial incentives to give the jab. Tenpenny again:

> Some people are going to die from the vaccine directly but a large number of people are going to start to get horribly sick and get all kinds of autoimmune diseases 42 days to maybe a year out. What are they going to do, these stupid doctors who say; 'Good for you for getting that vaccine.' What are they going to say; 'Oh, it must be a mutant, we need to give an extra dose of that vaccine.'
>
> Because now the vaccine, instead of one dose or two doses we need three or four because the stupid physicians aren't taking the time to learn anything about it. If I can learn this sitting in my living room reading a 19 page paper and several others so can they. There's nothing special about me, I just take the time to do it.

Remember how Sara Kayat, the NHS and TV doctor, said that the 'Covid vaccine' would '100 percent prevent hospitalisation and death'. Doctors can be idiots like every other profession and they

should not be worshipped as infallible. They are not and far from it. Behind many medical and scientific 'experts' lies an uninformed prat trying to hide themselves from you although in the 'Covid' era many have failed to do so as with UK narrative-repeating 'TV doctor' Hilary Jones. Pushing back against the minority of proper doctors and scientists speaking out against the 'vaccine' has been the entire edifice of the Cult global state in the form of governments, medical systems, corporations, mainstream media, Silicon Valley, and an army of compliant doctors, medical staff and scientists willing to say anything for money and to enhance their careers by promoting the party line. If you do that you are an 'expert' and if you won't you are an 'anti-vaxxer' and 'Covidiot'. The pressure to be 'vaccinated' is incessant. We have even had reports claiming that the 'vaccine' can help cure cancer and Alzheimer's and make the lame walk. I am waiting for the announcement that it can bring you coffee in the morning and cook your tea. Just as the symptoms of 'Covid' seem to increase by the week so have the miracles of the 'vaccine'. American supermarket giant Kroger Co. offered nearly 500,000 employees in 35 states a $100 bonus for having the 'vaccine' while donut chain Krispy Kreme promised 'vaccinated' customers a free glazed donut every day for the rest of 2021. Have your DNA changed and you will get a doughnut although we might not have to give you them for long. Such offers and incentives confirm the desperation.

Perhaps the worse vaccine-stunt of them all was UK 'Health' Secretary Matt-the-prat Hancock on live TV after watching a clip of someone being 'vaccinated' when the roll-out began. Hancock faked tears so badly it was embarrassing. Brain-of-Britain Piers Morgan, the lockdown-supporting, 'vaccine' supporting, 'vaccine' passport-supporting, TV host played along with Hancock – 'You're quite emotional about that' he said in response to acting so atrocious it would have been called out at a school nativity which will presumably today include Mary and Jesus in masks, wise men keeping their camels six feet apart, and shepherds under tent arrest. System-serving Morgan tweeted this: 'Love the idea of covid vaccine passports for everywhere: flights, restaurants, clubs, football, gyms,

shops etc. It's time covid-denying, anti-vaxxer loonies had their bullsh*t bluff called & bar themselves from going anywhere that responsible citizens go.' If only I could aspire to his genius. To think that Morgan, who specialises in shouting over anyone he disagrees with, was lauded as a free speech hero when he lost his job after storming off the set of his live show like a child throwing his dolly out of the pram. If he is a free speech hero we are in real trouble. I have no idea what 'bullsh*t' means, by the way, the * throws me completely.

The Cult is desperate to infuse its synthetic DNA-changing concoction into everyone and has been using every lie, trick and intimidation to do so. The question of '*Why*?' we shall now address.

CHAPTER TEN

Human 2.0

I believe that at the end of the century the use of words and general educated opinion will have altered so much that one will be able to speak of machines thinking without expecting to be contradicted –
Alan Turing (1912-1954), the 'Father of artificial intelligence'

I have been exposing for decades the plan to transform the human body from a biological to a synthetic-biological state. The new human that I will call Human 2.0 is planned to be connected to artificial intelligence and a global AI 'Smart Grid' that would operate as one global system in which AI would control everything from your fridge to your heating system to your car to your mind. Humans would no longer be 'human', but post-human and sub-human, with their thinking and emotional processes replaced by AI.

What I said sounded crazy and beyond science fiction and I could understand that. To any balanced, rational, mind it *is* crazy. Today, however, that world is becoming reality and it puts the 'Covid vaccine' into its true context. Ray Kurzweil is the ultra-Zionist 'computer scientist, inventor and futurist' and co-founder of the Singularity University. Singularity refers to the merging of humans with machines or 'transhumanism'. Kurzweil has said humanity would be connected to the cyber 'cloud' in the period of the ever-recurring year of 2030:

Our thinking … will be a hybrid of biological and non-biological thinking … humans will be able to extend their limitations and 'think in the cloud' … We're going to put gateways to the

cloud in our brains ... We're going to gradually merge and enhance ourselves ... In my view, that's the nature of being human – we transcend our limitations. As the technology becomes vastly superior to what we are then the small proportion that is still human gets smaller and smaller and smaller until it's just utterly negligible.

They are trying to sell this end-of-humanity-as-we-know-it as the next stage of 'evolution' when we become super-human and 'like the gods'. They are lying to you. Shocked, eh? The population, and again especially the young, have been manipulated into addiction to technologies designed to enslave them for life. First they induced an addiction to smartphones (holdables); next they moved to technology on the body (wearables); and then began the invasion of the body (implantables). I warned way back about the plan for microchipped people and we are now entering that era. We should not be diverted into thinking that this refers only to chips we can see. Most important are the nanochips known as smart dust, neural dust and nanobots which are far too small to be seen by the human eye. Nanotechnology is everywhere, increasingly in food products, and released into the atmosphere by the geoengineering of the skies funded by Bill Gates to 'shut out the Sun' and 'save the planet from global warming'. Gates has been funding a project to spray millions of tonnes of chalk (calcium carbonate) into the stratosphere over Sweden to 'dim the Sun' and cool the Earth. Scientists warned the move could be disastrous for weather systems in ways no one can predict and opposition led to the Swedish space agency announcing that the 'experiment' would not be happening as planned in the summer of 2021; but it shows where the Cult is going with dimming the impact of the Sun and there's an associated plan to change the planet's atmosphere. Who gives psychopath Gates the right to dictate to the entire human race and dismantle planetary systems? The world will not be safe while this man is at large.

The global warming hoax has made the Sun, like the gas of life, something to fear when both are essential to good health and human survival (more inversion). The body transforms sunlight into vital vitamin D through a process involving … *cholesterol*. This is the cholesterol we are also told to fear. We are urged to take Big Pharma

statin drugs to reduce cholesterol and it's all systematic. Reducing cholesterol means reducing vitamin D uptake with all the multiple health problems that will cause. At least if you take statins long term it saves the government from having to pay you a pension. The delivery system to block sunlight is widely referred to as chemtrails although these have a much deeper agenda, too. They appear at first to be contrails or condensation trails streaming from aircraft into cold air at high altitudes. Contrails disperse very quickly while chemtrails do not and spread out across the sky before eventually their content falls to earth. Many times I have watched aircraft cross-cross a clear blue sky releasing chemtrails until it looks like a cloudy day. Chemtrails contain many things harmful to humans and the natural world including toxic heavy metals, aluminium (see Alzheimer's) and nanotechnology. Ray Kurzweil reveals the reason without actually saying so: 'Nanobots will infuse all the matter around us with information. Rocks, trees, everything will become these intelligent creatures.' How do you deliver that? *From the sky*. Self-replicating nanobots would connect everything to the Smart Grid. The phenomenon of Morgellons disease began in the chemtrail era and the correlation has led to it being dubbed the 'chemtrail disease'. Self-replicating fibres appear in the body that can be pulled out through the skin. Morgellons fibres continue to grow outside the body and have a form of artificial intelligence. I cover this at greater length in *Phantom Self*.

'Vaccine' operating system

'Covid vaccines' with their self-replicating synthetic material are also designed to make the connection between humanity and Kurzweil's 'cloud'. American doctor and dedicated campaigner for truth, Carrie Madej, an Internal Medicine Specialist in Georgia with more than 20 years medical experience, has highlighted the nanotechnology aspect of the fake 'vaccines'. She explains how one of the components in at least the Moderna and Pfizer synthetic potions are 'lipid nanoparticles' which are 'like little tiny computer bits' – a 'sci-fi substance' known as nanobots and hydrogel which can be 'triggered

at any moment to deliver its payload' and act as 'biosensors'. The synthetic substance had 'the ability to accumulate data from your body like your breathing, your respiration, thoughts and emotions, all kind of things' and each syringe could carry a *million* nanobots:

This substance because it's like little bits of computers in your body, crazy, but it's true, it can do that, [and] obviously has the ability to act through Wi-Fi. It can receive and transmit energy, messages, frequencies or impulses. That issue has never been addressed by these companies. What does that do to the human?

Just imagine getting this substance in you and it can react to things all around you, the 5G, your smart device, your phones, what is happening with that? What if something is triggering it, too, like an impulse, a frequency? We have something completely foreign in the human body.

Madej said her research revealed that electromagnetic (EMF) frequencies emitted by phones and other devices had increased dramatically in the same period of the 'vaccine' rollout and she was seeing more people with radiation problems as 5G and other electromagnetic technology was expanded and introduced to schools and hospitals. She said she was 'floored with the EMF coming off' the devices she checked. All this makes total sense and syncs with my own work of decades when you think that Moderna refers in documents to its mRNA 'vaccine' as an 'operating system':

Recognizing the broad potential of mRNA science, we set out to create an mRNA technology platform that functions very much like an operating system on a computer. It is designed so that it can plug and play interchangeably with different programs. In our case, the 'program' or 'app' is our mRNA drug – the unique mRNA sequence that codes for a protein …

… Our MRNA Medicines – 'The 'Software Of Life': When we have a concept for a new mRNA medicine and begin research, fundamental components are already in place. Generally, the only thing that changes from one potential mRNA medicine to another is the coding region – the actual genetic code that instructs ribosomes to make protein. Utilizing these instruction sets gives our investigational mRNA medicines a software-like quality. We also have the ability to combine different mRNA sequences encoding for different proteins in a single mRNA investigational medicine.

Who needs a real 'virus' when you can create a computer version to justify infusing your operating system into the entire human race on the road to making living, breathing people into cyborgs? What is missed with the 'vaccines' is the *digital* connection between synthetic material and the body that I highlighted earlier with the study that hacked a computer with human DNA. On one level the body is digital, based on mathematical codes, and I'll have more about that in the next chapter. Those who ridiculously claim that mRNA 'vaccines' are not designed to change human genetics should explain the words of Dr Tal Zaks, chief medical officer at Moderna, in a 2017 TED talk. He said that over the last 30 years 'we've been living this phenomenal digital scientific revolution, and I'm here today to tell you, that we are actually *hacking the software of life*, and that it's changing the way we think about prevention and treatment of disease':

In every cell there's this thing called messenger RNA, or mRNA for short, that transmits the critical information from the DNA in our genes to the protein, which is really the stuff we're all made out of. This is the critical information that determines what the cell will do. So we think about it as an operating system. So if you could change that, if you could introduce a line of code, or change a line of code, it turns out, that has profound implications for everything, from the flu to cancer.

Zaks should more accurately have said that this has profound implications for the human genetic code and the nature of DNA. Communications within the body go both ways and not only one. But, hey, no, the 'Covid vaccine' will not affect your genetics. Cult fact-checkers say so even though the man who helped to develop the mRNA technique says that it does. Zaks said in 2017:

If you think about what it is we're trying to do. We've taken information and our understanding of that information and how that information is transmitted in a cell, and we've taken our understanding of medicine and how to make drugs, and we're fusing the two. We think of it as information therapy.

I have been writing for decades that the body is an information field communicating with itself and the wider world. This is why

radiation which is information can change the information field of body and mind through phenomena like 5G and change their nature and function. 'Information therapy' means to change the body's information field and change the way it operates. DNA is a receiver-transmitter of information and can be mutated by information like mRNA synthetic messaging. Technology to do this has been ready and waiting in the underground bases and other secret projects to be rolled out when the 'Covid' hoax was played. 'Trials' of such short and irrelevant duration were only for public consumption. When they say the 'vaccine' is 'experimental' that is not true. It may appear to be 'experimental' to those who don't know what's going on, but the trials have already been done to ensure the Cult gets the result it desires. Zaks said that it took decades to sequence the human genome, completed in 2003, but now they could do it in a week. By 'they' he means scientists operating in the public domain. In the secret projects they were sequencing the genome in a week long before even 2003.

Deluge of mRNA

Highly significantly the Moderna document says the guiding premise is that if using mRNA as a medicine works for one disease then it should work for many diseases. They were leveraging the flexibility afforded by their platform and the fundamental role mRNA plays in protein synthesis to pursue mRNA medicines for a broad spectrum of diseases. Moderna is confirming what I was saying through 2020 that multiple 'vaccines' were planned for 'Covid' (and later invented 'variants') and that previous vaccines would be converted to the mRNA system to infuse the body with massive amounts of genetically-manipulating synthetic material to secure a transformation to a synthetic-biological state. The 'vaccines' are designed to kill stunning numbers as part of the long-exposed Cult depopulation agenda and transform the rest. Given this is the goal you can appreciate why there is such hysterical demand for every human to be 'vaccinated' for an alleged 'disease' that has an estimated 'infection' to 'death' ratio of 0.23-0.15 percent. As I write

children are being given the 'vaccine' in trials (their parents are a disgrace) and ever-younger people are being offered the vaccine for a 'virus' that even if you believe it exists has virtually zero chance of harming them. Horrific effects of the 'trials' on a 12-year-old girl were revealed by a family member to be serious brain and gastric problems that included a bowel obstruction and the inability to swallow liquids or solids. She was unable to eat or drink without throwing up, had extreme pain in her back, neck and abdomen, and was paralysed from the waist down which stopped her urinating unaided. When the girl was first taken to hospital doctors said it was all in her mind. She was signed up for the 'trial' by her parents for whom no words suffice. None of this 'Covid vaccine' insanity makes any sense unless you see what the 'vaccine' really is – a body-changer. Synthetic biology or 'SynBio' is a fast-emerging and expanding scientific discipline which includes everything from genetic and molecular engineering to electrical and computer engineering. Synthetic biology is defined in these ways:

- A multidisciplinary area of research that seeks to create new biological parts, devices, and systems, or to redesign systems that are already found in nature.

- The use of a mixture of physical engineering and genetic engineering to create new (and therefore synthetic) life forms.

- An emerging field of research that aims to combine the knowledge and methods of biology, engineering and related disciplines in the design of chemically-synthesized DNA to create organisms with novel or enhanced characteristics and traits (synthetic organisms including humans).

We now have synthetic blood, skin, organs and limbs being developed along with synthetic body parts produced by 3D printers. These are all elements of the synthetic human programme and this comment by Kurzweil's co-founder of the Singularity University,

Peter Diamandis, can be seen in a whole new light with the 'Covid' hoax and the sanctions against those that refuse the 'vaccine':

Anybody who is going to be resisting the progress forward [to transhumanism] is going to be resisting evolution and, fundamentally, they will die out. It's not a matter of whether it's good or bad. It's going to happen.

'Resisting evolution'? What absolute bollocks. The arrogance of these people is without limit. His 'it's going to happen' mantra is another way of saying 'resistance is futile' to break the spirit of those pushing back and we must not fall for it. Getting this genetically-transforming 'vaccine' into everyone is crucial to the Cult plan for total control and the desperation to achieve that is clear for anyone to see. Vaccine passports are a major factor in this and they, too, are a form of resistance is futile. It's NOT. The paper funded by the Rockefeller Foundation for the 2013 'health conference' in China said:

We will interact more with artificial intelligence. The use of robotics, bio-engineering to augment human functioning is already well underway and will advance. Re-engineering of humans into potentially separate and unequal forms through genetic engineering or mixed human-robots raises debates on ethics and equality.

A new demography is projected to emerge after 2030 [that year again] of technologies (robotics, genetic engineering, nanotechnology) producing robots, engineered organisms, 'nanobots' and artificial intelligence (AI) that can self-replicate. Debates will grow on the implications of an impending reality of human designed life.

What is happening today is so long planned. The world army enforcing the will of the world government is intended to be a robot army, not a human one. Today's military and its technologically 'enhanced' troops, pilotless planes and driverless vehicles are just stepping stones to that end. Human soldiers are used as Cult fodder and its time they woke up to that and worked for the freedom of the population instead of their own destruction and their family's destruction – the same with the police. Join us and let's sort this out. The phenomenon of enforce my own destruction is widespread in the 'Covid' era with Woker 'luvvies' in the acting and entertainment

industries supporting 'Covid' rules which have destroyed their profession and the same with those among the public who put signs on the doors of their businesses 'closed due to Covid – stay safe' when many will never reopen. It's a form of masochism and most certainly insanity.

Transgender = transhumanism

When something explodes out of nowhere and is suddenly everywhere it is always the Cult agenda and so it is with the tidal wave of claims and demands that have infiltrated every aspect of society under the heading of 'transgenderism'. The term 'trans' is so 'in' and this is the dictionary definition:

A prefix meaning 'across', 'through', occurring … in loanwords from Latin, used in particular for denoting movement or conveyance from place to place (transfer; transmit; transplant) or complete change (transform; transmute), or to form adjectives meaning 'crossing', 'on the other side of', or 'going beyond' the place named (transmontane; transnational; trans-Siberian).

Transgender means to go beyond gender and transhuman means to go beyond human. Both are aspects of the Cult plan to transform the human body to a synthetic state with *no gender*. Human 2.0 is not designed to procreate and would be produced technologically with no need for parents. The new human would mean the end of parents and so men, and increasingly women, are being targeted for the deletion of their rights and status. Parental rights are disappearing at an ever-quickening speed for the same reason. The new human would have no need for men or women when there is no procreation and no gender. Perhaps the transgender movement that appears to be in a permanent state of frenzy might now contemplate on how it is being used. This was never about transgender rights which are only the interim excuse for confusing gender, particularly in the young, on the road to *fusing* gender. Transgender activism is not an end; it is a *means* to an end. We see again the technique of creative destruction in which you destroy the status quo to 'build back better' in the form that you want. The gender status quo had to be

destroyed by persuading the Cult-created Woke mentality to believe that you can have 100 genders or more. A programme for 9 to 12 year olds produced by the Cult-owned BBC promoted the 100 genders narrative. The very idea may be the most monumental nonsense, but it is not what is true that counts, only what you can make people *believe* is true. Once the gender of 2 + 2 = 4 has been dismantled through indoctrination, intimidation and 2 + 2 = 5 then the new no-gender normal can take its place with Human 2.0. Aldous Huxley revealed the plan in his prophetic *Brave New World* in 1932:

> Natural reproduction has been done away with and children are created, decanted', and raised in 'hatcheries and conditioning centres'. From birth, people are genetically designed to fit into one of five castes, which are further split into 'Plus' and 'Minus' members and designed to fulfil predetermined positions within the social and economic strata of the World State.

How could Huxley know this in 1932? For the same reason George Orwell knew about the Big Brother state in 1948, Cult insiders I have quoted knew about it in 1969, and I have known about it since the early 1990s. If you are connected to the Cult or you work your balls off to uncover the plan you can predict the future. The process is simple. If there is a plan for the world and nothing intervenes to stop it then it will happen. Thus if you communicate the plan ahead of time you are perceived to have predicted the future, but you haven't. You have revealed the plan which without intervention will become the human future. The whole reason I have done what I have is to alert enough people to inspire an intervention and maybe at last that time has come with the Cult and its intentions now so obvious to anyone with a brain in working order.

The future is here

Technological wombs that Huxley described to replace parent procreation are already being developed and they are only the projects we know about in the public arena. Israeli scientists told *The Times of Israel* in March, 2021, that they have grown 250-cell embryos

into mouse foetuses with fully formed organs using artificial wombs in a development they say could pave the way for gestating humans outside the womb. Professor Jacob Hanna of the Weizmann Institute of Science said:

We took mouse embryos from the mother at day five of development, when they are just of 250 cells, and had them in the incubator from day five until day 11, by which point they had grown all their organs.

By day 11 they make their own blood and have a beating heart, a fully developed brain. Anybody would look at them and say, 'this is clearly a mouse foetus with all the characteristics of a mouse.' It's gone from being a ball of cells to being an advanced foetus.

A special liquid is used to nourish embryo cells in a laboratory dish and they float on the liquid to duplicate the first stage of embryonic development. The incubator creates all the right conditions for its development, Hanna said. The liquid gives the embryo 'all the nutrients, hormones and sugars they need' along with a custom-made electronic incubator which controls gas concentration, pressure and temperature. The cutting-edge in the underground bases and other secret locations will be light years ahead of that, however, and this was reported by the London *Guardian* in 2017:

We are approaching a biotechnological breakthrough. Ectogenesis, the invention of a complete external womb, could completely change the nature of human reproduction. In April this year, researchers at the Children's Hospital of Philadelphia announced their development of an artificial womb.

The article was headed 'Artificial wombs could soon be a reality. What will this mean for women?' What would it mean for children is an even bigger question. No mother to bond with only a machine in preparation for a life of soulless interaction and control in a world governed by machines (see the *Matrix* movies). Now observe the calculated manipulations of the 'Covid' hoax as human interaction and warmth has been curtailed by distancing, isolation and fear with people communicating via machines on a scale never seen before.

These are all dots in the same picture as are all the personal assistants, gadgets and children's toys through which kids and adults communicate with AI as if it is human. The AI 'voice' on Sat-Nav should be included. All these things are psychological preparation for the Cult endgame. Before you can make a physical connection with AI you have to make a psychological connection and that is what people are being conditioned to do with this ever gathering human-AI interaction. Movies and TV programmes depicting the transhuman, robot dystopia relate to a phenomenon known as 'pre-emptive programming' in which the world that is planned is portrayed everywhere in movies, TV and advertising. This is conditioning the conscious and subconscious mind to become familiar with the planned reality to dilute resistance when it happens for real. What would have been a shock such is the change is made less so. We have young children put on the road to transgender transition surgery with puberty blocking drugs at an age when they could never be able to make those life-changing decisions.

Rachel Levine, a professor of paediatrics and psychiatry who believes in treating children this way, became America's highest-ranked openly-transgender official when she was confirmed as US Assistant Secretary at the Department of Health and Human Services after being nominated by Joe Biden (the Cult). Activists and governments press for laws to deny parents a say in their children's transition process so the kids can be isolated and manipulated into agreeing to irreversible medical procedures. A Canadian father Robert Hoogland was denied bail by the Vancouver Supreme Court in 2021 and remained in jail for breaching a court order that he stay silent over his young teenage daughter, a minor, who was being offered life-changing hormone therapy without parental consent. At the age of 12 the girl's 'school counsellor' said she may be transgender, referred her to a doctor and told the school to treat her like a boy. This is another example of state-serving schools imposing ever more control over children's lives while parents have ever less.

Contemptible and extreme child abuse is happening all over the world as the Cult gender-fusion operation goes into warp-speed.

Why the war on men – and now women?

The question about what artificial wombs mean for women should rightly be asked. The answer can be seen in the deletion of women's rights involving sport, changing rooms, toilets and status in favour of people in male bodies claiming to identify as women. I can identify as a mountain climber, but it doesn't mean I can climb a mountain any more than a biological man can be a biological woman. To believe so is a triumph of belief over factual reality which is the very perceptual basis of everything Woke. Women's sport is being destroyed by allowing those with male bodies who say they identify as female to 'compete' with girls and women. Male body 'women' dominate 'women's' competition with their greater muscle mass, bone density, strength and speed. With that disadvantage sport for women loses all meaning. To put this in perspective nearly 300 American high school boys can run faster than the quickest woman sprinter in the world. Women are seeing their previously protected spaces invaded by male bodies simply because they claim to identify as women. That's all they need to do to access all women's spaces and activities under the Biden 'Equality Act' that destroys equality for women with the usual Orwellian Woke inversion. Male sex offenders have already committed rapes in women's prisons after claiming to identify as women to get them transferred. Does this not matter to the Woke 'equality' hypocrites? Not in the least. What matters to Cult manipulators and funders behind transgender activists is to advance gender fusion on the way to the no-gender 'human'. When you are seeking to impose transparent nonsense like this, or the 'Covid' hoax, the only way the nonsense can prevail is through censorship and intimidation of dissenters, deletion of factual information, and programming of the unquestioning, bewildered and naive. You don't have to scan the world for long to see that all these things are happening.

Many women's rights organisations have realised that rights and status which took such a long time to secure are being eroded and that it is systematic. Kara Dansky of the global Women's Human Rights Campaign said that Biden's transgender executive order immediately he took office, subsequent orders, and Equality Act legislation that followed 'seek to erase women and girls in the law as a category'. *Exactly*. I said during the long ago-started war on men (in which many women play a crucial part) that this was going to turn into a war on them. The Cult is phasing out *both* male and female genders. To get away with that they are brought into conflict so they are busy fighting each other while the Cult completes the job with no unity of response. Unity, people, *unity*. We need unity everywhere. Transgender is the only show in town as the big step towards the no-gender human. It's not about rights for transgender people and never has been. Woke political correctness is deleting words relating to genders to the same end. Wokers believe this is to be 'inclusive' when the opposite is true. They are deleting words describing gender because gender *itself* is being deleted by Human 2.0. Terms like 'man', 'woman', 'mother' and 'father' are being deleted in the universities and other institutions to be replaced by the *no*-gender, not trans-gender, 'individuals' and 'guardians'. Women's rights campaigner Maria Keffler of Partners for Ethical Care said: 'Children are being taught from kindergarten upward that some boys have a vagina, some girls have a penis, and that kids can be any gender they want to be.' Do we really believe that suddenly countries all over the world at the same time had the idea of having drag queens go into schools or read transgender stories to very young children in the local library? It's coldly-calculated confusion of gender on the way to the fusion of gender. Suzanne Vierling, a psychologist from Southern California, made another important point:

Yesterday's slave woman who endured gynecological medical experiments is today's girl-child being butchered in a booming gender-transitioning sector. Ovaries removed, pushing her into menopause and osteoporosis, uncharted territory, and parents' rights and authority decimated.

The erosion of parental rights is a common theme in line with the Cult plans to erase the very concept of parents and 'ovaries removed, pushing her into menopause' means what? Those born female lose the ability to have children – another way to discontinue humanity as we know it.

Eliminating Human 1.0 (before our very eyes)

To pave the way for Human 2.0 you must phase out Human 1.0. This is happening through plummeting sperm counts and making women infertile through an onslaught of chemicals, radiation (including smartphones in pockets of men) and mRNA 'vaccines'. Common agriculture pesticides are also having a devastating impact on human fertility. I have been tracking collapsing sperm counts in the books for a long time and in 2021 came a book by fertility scientist and reproductive epidemiologist Shanna Swan, *Count Down: How Our Modern World Is Threatening Sperm Counts, Altering Male and Female Reproductive Development and Imperiling the Future of the Human Race*. She reports how the global fertility rate dropped by *half* between 1960 and 2016 with America's birth rate 16 percent below where it needs to be to sustain the population. Women are experiencing declining egg quality, more miscarriages, and more couples suffer from infertility. Other findings were an increase in erectile dysfunction, infant boys developing more genital abnormalities, male problems with conception, and plunging levels of the male hormone testosterone which would explain why so many men have lost their backbone and masculinity. This has been very evident during the 'Covid' hoax when women have been prominent among the Pushbackers and big strapping blokes have bowed their heads, covered their faces with a nappy and quietly submitted. Mind control expert Cathy O'Brien also points to how global education introduced the concept of 'we're all winners' in sport and classrooms: 'Competition was defused, and it in turn defused a sense of fighting back.' This is another version of the 'equity' doctrine in which you drive down rather than raise up. What a contrast in Cult-controlled China with its global ambitions

where the government published plans in January, 2021, to 'cultivate masculinity' in boys from kindergarten through to high school in the face of a 'masculinity crisis'. A government adviser said boys would be soon become 'delicate, timid and effeminate' unless action was taken. Don't expect any similar policy in the targeted West. A 2006 study showed that a 65-year-old man in 2002 had testosterone levels *15 percent* lower than a 65-year-old man in 1987 while a 2020 study found a similar story with young adults and adolescents. Men are getting prescriptions for testosterone replacement therapy which causes an even greater drop in sperm count with up to 99 percent seeing sperm counts drop to zero during the treatment. More sperm is defective and malfunctioning with some having two heads or not pursuing an egg.

A class of *synthetic* chemicals known as phthalates are being blamed for the decline. These are found everywhere in plastics, shampoos, cosmetics, furniture, flame retardants, personal care products, pesticides, canned foods and even receipts. Why till receipts? Everyone touches them. Let no one delude themselves that all this is not systematic to advance the long-time agenda for human body transformation. Phthalates mimic hormones and disrupt the hormone balance causing testosterone to fall and genital birth defects in male infants. Animals and fish have been affected in the same way due to phthalates and other toxins in rivers. When fish turn gay or change sex through chemicals in rivers and streams it is a pointer to why there has been such an increase in gay people and the sexually confused. It doesn't matter to me what sexuality people choose to be, but if it's being affected by chemical pollution and consumption then we need to know. Does anyone really think that this is not connected to the transgender agenda, the war on men and the condemnation of male 'toxic masculinity'? You watch this being followed by 'toxic femininity'. It's already happening. When breastfeeding becomes 'chest-feeding', pregnant women become pregnant people along with all the other Woke claptrap you know that the world is going insane and there's a Cult scam in progress. Transgender activists are promoting the Cult agenda while Cult

billionaires support and fund the insanity as they laugh themselves to sleep at the sheer stupidity for which humans must be infamous in galaxies far, far away.

'Covid vaccines' and female infertility

We can now see why the 'vaccine' has been connected to potential infertility in women. Dr Michael Yeadon, former Vice President and Chief Scientific Advisor at Pfizer, and Dr Wolfgang Wodarg in Germany, filed a petition with the European Medicines Agency in December, 2020, urging them to stop trials for the Pfizer/BioNTech shot and all other mRNA trials until further studies had been done. They were particularly concerned about possible effects on fertility with 'vaccine'-produced antibodies attacking the protein Syncytin-1 which is responsible for developing the placenta. The result would be infertility 'of indefinite duration' in women who have the 'vaccine' with the placenta failing to form. Section 10.4.2 of the Pfizer/BioNTech trial protocol says that pregnant women or those who might become so should not have mRNA shots. Section 10.4 warns men taking mRNA shots to 'be abstinent from heterosexual intercourse' and not to donate sperm. The UK government said that it *did not know* if the mRNA procedure had an effect on fertility. *Did not know?* These people have to go to jail. UK government advice did not recommend at the start that pregnant women had the shot and said they should avoid pregnancy for at least two months after 'vaccination'. The 'advice' was later updated to pregnant women should only have the 'vaccine' if the benefits outweighed the risks to mother and foetus. What the hell is that supposed to mean? Then 'spontaneous abortions' began to appear and rapidly increase on the adverse reaction reporting schemes which include only a fraction of adverse reactions. Thousands and ever-growing numbers of 'vaccinated' women are describing changes to their menstrual cycle with heavier blood flow, irregular periods and menstruating again after going through the menopause – all links to reproduction effects. Women are passing blood clots and the lining of their uterus while men report erectile dysfunction and blood effects. Most

significantly of all *un*vaccinated women began to report similar menstrual changes after interaction with *'vaccinated'* people and men and children were also affected with bleeding noses, blood clots and other conditions. 'Shedding' is when vaccinated people can emit the content of a vaccine to affect the unvaccinated, but this is different. 'Vaccinated' people were not shedding a 'live virus' allegedly in 'vaccines' as before because the fake 'Covid vaccines' involve synthetic material and other toxicity. Doctors exposing what is happening prefer the term 'transmission' to shedding. Somehow those that have had the shots are transmitting effects to those that haven't. Dr Carrie Madej said the nano-content of the 'vaccines' can 'act like an antenna' to others around them which fits perfectly with my own conclusions. This 'vaccine' transmission phenomenon was becoming known as the book went into production and I deal with this further in the Postscript.

Vaccine effects on sterility are well known. The World Health Organization was accused in 2014 of sterilising millions of women in Kenya with the evidence confirmed by the content of the vaccines involved. The same WHO behind the 'Covid' hoax admitted its involvement for more than ten years with the vaccine programme. Other countries made similar claims. Charges were lodged by Tanzania, Nicaragua, Mexico, and the Philippines. The Gardasil vaccine claimed to protect against a genital 'virus' known as HPV has also been linked to infertility. Big Pharma and the WHO (same thing) are criminal and satanic entities. Then there's the Bill Gates Foundation which is connected through funding and shared interests with 20 pharmaceutical giants and laboratories. He stands accused of directing the policy of United Nations Children's Fund (UNICEF), vaccine alliance GAVI, and other groupings, to advance the vaccine agenda and silence opposition at great cost to women and children. At the same time Gates wants to reduce the global population. Coincidence?

Great Reset = Smart Grid = new human

The Cult agenda I have been exposing for 30 years is now being openly promoted by Cult assets like Gates and Klaus Schwab of the World Economic Forum under code-terms like the 'Great Reset', 'Build Back Better' and 'a rare but narrow window of opportunity to reflect, reimagine, and reset our world'. What provided this 'rare but narrow window of opportunity'? The 'Covid' hoax did. Who created that? *They* did. My books from not that long ago warned about the planned 'Internet of Things' (IoT) and its implications for human freedom. This was the plan to connect all technology to the Internet and artificial intelligence and today we are way down that road with an estimated 36 billion devices connected to the World Wide Web and that figure is projected to be 76 billion by 2025. I further warned that the Cult planned to go beyond that to the Internet of *Everything* when the human brain was connected via AI to the Internet and Kurzweil's 'cloud'. Now we have Cult operatives like Schwab calling for precisely that under the term 'Internet of Bodies', a fusion of the physical, digital and biological into one centrally-controlled Smart Grid system which the Cult refers to as the 'Fourth Industrial Revolution'. They talk about the 'biological', but they really mean the synthetic-biological which is required to fully integrate the human body and brain into the Smart Grid and artificial intelligence planned to replace the human mind. We have everything being synthetically manipulated including the natural world through GMO and smart dust, the food we eat and the human body itself with synthetic 'vaccines'. I said in *The Answer* that we would see the Cult push for synthetic meat to replace animals and in February, 2021, the so predictable psychopath Bill Gates called for the introduction of synthetic meat to save us all from 'climate change'. The climate hoax just keeps on giving like the 'Covid' hoax. The war on meat by vegan activists is a carbon (oops, sorry) copy of the manipulation of transgender activists. They have no idea (except their inner core) that they are being used to promote and impose the agenda of the Cult or that they are only the *vehicle* and not the *reason*. This is not to say those who choose not to eat meat shouldn't be respected and supported in that right, but there are ulterior motives

for those in power. A *Forbes* article in December, 2019, highlighted the plan so beloved of Schwab and the Cult under the heading: 'What Is The Internet of Bodies? And How Is It Changing Our World?' The article said the human body is the latest data platform (remember 'our vaccine is an operating system'). *Forbes* described the plan very accurately and the words could have come straight out of my books from long before:

The Internet of Bodies (IoB) is an extension of the IoT and basically connects the human body to a network through devices that are ingested, implanted, or connected to the body in some way. Once connected, data can be exchanged, and the body and device can be remotely monitored and controlled.

They were really describing a human hive mind with human perception centrally-dictated via an AI connection as well as allowing people to be 'remotely monitored and controlled'. Everything from a fridge to a human mind could be directed from a central point by these insane psychopaths and 'Covid vaccines' are crucial to this. Forbes explained the process I mentioned earlier of holdable and wearable technology followed by implantable. The article said there were three generations of the Internet of Bodies that include:

- Body external: These are wearable devices such as Apple Watches or Fitbits that can monitor our health.

- Body internal: These include pacemakers, cochlear implants, and digital pills that go inside our bodies to monitor or control various aspects of health.

- Body embedded: The third generation of the Internet of Bodies is embedded technology where technology and the human body are melded together and have a real-time connection to a remote machine.

Forbes noted the development of the Brain Computer Interface (BCI) which merges the brain with an external device for monitoring and controlling in real-time. 'The ultimate goal is to help restore function to individuals with disabilities by using brain signals rather than conventional neuromuscular pathways.' Oh, do fuck off. The goal of brain interface technology is controlling human thought and emotion from the central point in a hive mind serving its masters wishes. Many people are now agreeing to be chipped to open doors without a key. You can recognise them because they'll be wearing a mask, social distancing and lining up for the 'vaccine'. The Cult plans a Great Reset money system after they have completed the demolition of the global economy in which 'money' will be exchanged through communication with body operating systems. Rand Corporation, a Cult-owned think tank, said of the Internet of Bodies or IoB:

> Internet of Bodies technologies fall under the broader IoT umbrella. But as the name suggests, IoB devices introduce an even more intimate interplay between humans and gadgets. IoB devices monitor the human body, collect health metrics and other personal information, and transmit those data over the Internet. Many devices, such as fitness trackers, are already in use … IoB devices … and those in development can track, record, and store users' whereabouts, bodily functions, and what they see, hear, and even think.

Schwab's World Economic Forum, a long-winded way of saying 'fascism' or 'the Cult', has gone full-on with the Internet of Bodies in the 'Covid' era. 'We're entering the era of the Internet of Bodies', it declared, 'collecting our physical data via a range of devices that can be implanted, swallowed or worn'. The result would be a huge amount of health-related data that could improve human wellbeing around the world, and prove crucial in fighting the 'Covid-19 pandemic'. Does anyone think these clowns care about 'human wellbeing' after the death and devastation their pandemic hoax has purposely caused? Schwab and co say we should move forward with the Internet of Bodies because 'Keeping track of symptoms could help us stop the spread of infection, and quickly detect new cases'. How wonderful, but keeping track' is all they are really bothered

about. Researchers were investigating if data gathered from smartwatches and similar devices could be used as viral infection alerts by tracking the user's heart rate and breathing. Schwab said in his 2018 book *Shaping the Future of the Fourth Industrial Revolution*:

> The lines between technologies and beings are becoming blurred and not just by the ability to create lifelike robots or synthetics. Instead it is about the ability of new technologies to literally become part of us. Technologies already influence how we understand ourselves, how we think about each other, and how we determine our realities. As the technologies … give us deeper access to parts of ourselves, we may begin to integrate digital technologies into our bodies.

You can see what the game is. Twenty-four hour control and people – if you could still call them that – would never know when something would go ping and take them out of circulation. It's the most obvious rush to a global fascist dictatorship and the complete submission of humanity and yet still so many are locked away in their Cult-induced perceptual coma and can't see it.

Smart Grid control centres

The human body is being transformed by the 'vaccines' and in other ways into a synthetic cyborg that can be attached to the global Smart Grid which would be controlled from a central point and other sub-locations of Grid manipulation. Where are these planned to be? Well, China for a start which is one of the Cult's biggest centres of operation. The technological control system and technocratic rule was incubated here to be unleashed across the world after the 'Covid' hoax came out of China in 2020. Another Smart Grid location that will surprise people new to this is Israel. I have exposed in *The Trigger* how Sabbatian technocrats, intelligence and military operatives were behind the horrors of 9/11 and not '19 Arab hijackers' who somehow manifested the ability to pilot big passenger airliners when instructors at puddle-jumping flying schools described some of them as a joke. The 9/11 attacks were made possible through control of civilian and military air computer systems and those of the White House, Pentagon and connected agencies. See *The Trigger* – it

will blow your mind. The controlling and coordinating force were the Sabbatian networks in Israel and the United States which by then had infiltrated the entire US government, military and intelligence system. The real name of the American Deep State is 'Sabbatian State'. Israel is a tiny country of only nine million people, but it is one of the global centres of cyber operations and fast catching Silicon Valley in importance to the Cult. Israel is known as the 'start-up nation' for all the cyber companies spawned there with the Sabbatian specialisation of 'cyber security' that I mentioned earlier which gives those companies access to computer systems of their clients in real time through 'backdoors' written into the coding when security software is downloaded. The Sabbatian centre of cyber operations outside Silicon Valley is the Israeli military Cyber Intelligence Unit, the biggest infrastructure project in Israel's history, headquartered in the desert-city of Beersheba and involving some 20,000 'cyber soldiers'. Here are located a literal army of Internet trolls scanning social media, forums and comment lists for anyone challenging the Cult agenda. The UK military has something similar with its 77th Brigade and associated operations. The Beersheba complex includes research and development centres for other Cult operations such as Intel, Microsoft, IBM, Google, Apple, Hewlett-Packard, Cisco Systems, Facebook and Motorola. Techcrunch.com ran an article about the Beersheba global Internet technology centre headlined 'Israel's desert city of Beersheba is turning into a cybertech oasis':

> The military's massive relocation of its prestigious technology units, the presence of multinational and local companies, a close proximity to Ben Gurion University and generous government subsidies are turning Beersheba into a major global cybertech hub. Beersheba has all of the ingredients of a vibrant security technology ecosystem, including Ben Gurion University with its graduate program in cybersecurity and Cyber Security Research Center, and the presence of companies such as EMC, Deutsche Telekom, PayPal, Oracle, IBM, and Lockheed Martin. It's also the future home of the INCB (Israeli National Cyber Bureau); offers a special income tax incentive for cyber security companies, and was the site for the relocation of the army's intelligence corps units.

Sabbatians have taken over the cyber world through the following process: They scan the schools for likely cyber talent and develop them at Ben Gurion University and their period of conscription in the Israeli Defense Forces when they are stationed at the Beersheba complex. When the cyber talented officially leave the army they are funded to start cyber companies with technology developed by themselves or given to them by the state. Much of this is stolen through backdoors of computer systems around the world with America top of the list. Others are sent off to Silicon Valley to start companies or join the major ones and so we have many major positions filled by apparently 'Jewish' but really Sabbatian operatives. Google, YouTube and Facebook are all run by 'Jewish' CEOs while Twitter is all but run by ultra-Zionist hedge-fund shark Paul Singer. At the centre of the Sabbatian global cyber web is the Israeli army's Unit 8200 which specialises in hacking into computer systems of other countries, inserting viruses, gathering information, instigating malfunction, and even taking control of them from a distance. A long list of Sabbatians involved with 9/11, Silicon Valley and Israeli cyber security companies are operatives of Unit 8200. This is not about Israel. It's about the Cult. Israel is planned to be a Smart Grid hub as with China and what is happening at Beersheba is not for the benefit of Jewish people who are treated disgustingly by the Sabbatian elite that control the country. A glance at the Nuremberg Codes will tell you that.

The story is much bigger than 'Covid', important as that is to where we are being taken. Now, though, it's time to really strap in. There's more … much more …

CHAPTER ELEVEN

Who controls the Cult?

Awake, arise or be forever fall'n
John Milton, *Paradise Lost*

I have exposed this far the level of the Cult conspiracy that operates in the world of the seen and within the global secret society and satanic network which operates in the shadows one step back from the seen. The story, however, goes much deeper than that.

The 'Covid' hoax is major part of the Cult agenda, but only part, and to grasp the biggest picture we have to expand our attention beyond the realm of human sight and into the infinity of possibility that we cannot see. It is from here, ultimately, that humanity is being manipulated into a state of total control by the force which dictates the actions of the Cult. How much of reality can we see? Next to damn all is the answer. We may appear to see all there is to see in the 'space' our eyes survey and observe, but little could be further from the truth. The human 'world' is only a tiny band of frequency that the body's visual and perceptual systems can decode into *perception* of a 'world'. According to mainstream science the electromagnetic spectrum is 0.005 percent of what exists in the Universe (Fig 10). The maximum estimate I have seen is 0.5 percent and either way it's miniscule. I say it is far, far, smaller even than 0.005 percent when you compare reality we see with the totality of reality that we don't. Now get this if you are new to such information: Visible light, the only band of frequency that we can see, is a *fraction* of the 0.005

percent (Fig 11 overleaf). Take this further and realise that our universe is one of infinite universes and that universes are only a fragment of overall reality – *infinite* reality. Then compare that with the almost infinitesimal frequency band of visible light or human sight. You see that humans are as near blind as it is possible to be without actually being so. Artist and filmmaker, Sergio Toporek, said:

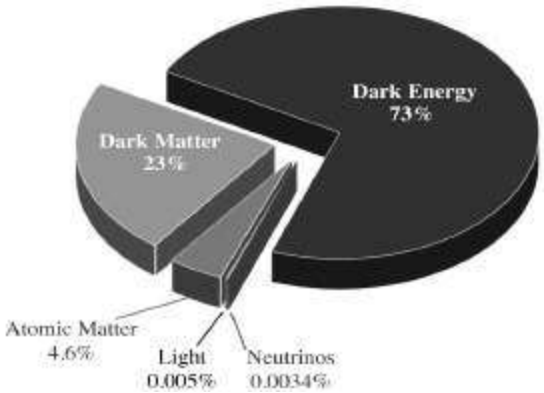

Figure 10: Humans can perceive such a tiny band of visual reality it's laughable.

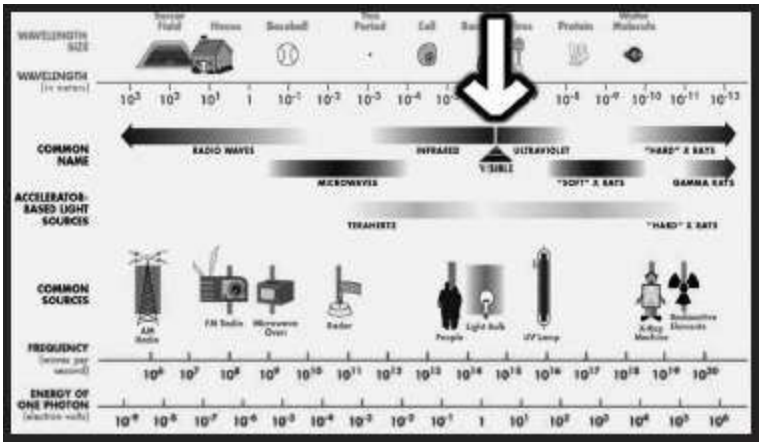

Figure 11: We can see a smear of the 0.005 percent electromagnetic spectrum, but we still know it all. Yep, makes sense.

Consider that you can see less than 1% of the electromagnetic spectrum and hear less than 1% of the acoustic spectrum. 90% of the cells in your body carry their own microbial DNA and are not 'you'. The atoms in your body are 99.9999999999999999% empty space and none of them are the ones you were born with ... Human beings have 46 chromosomes, two less than a potato.

The existence of the rainbow depends on the conical photoreceptors in your eyes; to animals without cones, the rainbow does not exist. So you don't just look at a rainbow, you create it. This is pretty amazing, especially considering that all the beautiful colours you see represent less than 1% of the electromagnetic spectrum.

Suddenly the 'world' of humans looks a very different place. Take into account, too, that Planet Earth when compared with the projected size of this single universe is the equivalent of a billionth of a pinhead. Imagine the ratio that would be when compared to infinite reality. To think that Christianity once insisted that Earth and humanity were the centre of everything. This background is vital if we are going to appreciate the nature of 'human' and how we can be manipulated by an unseen force. To human visual reality virtually *everything* is unseen and yet the prevailing perception within the institutions and so much of the public is that if we can't see it, touch it, hear it, taste it and smell it then it cannot exist. Such perception is indoctrinated and encouraged by the Cult and its agents because it isolates believers in the strictly limited, village-idiot, realm of the five senses where perceptions can be firewalled and information controlled. Most of those perpetuating the 'this-world-is-all-there-is' insanity are themselves indoctrinated into believing the same delusion. While major players and influencers know that official reality is laughable most of those in science, academia and medicine really believe the nonsense they peddle and teach succeeding generations. Those who challenge the orthodoxy are dismissed as nutters and freaks to protect the manufactured illusion from exposure. Observe the dynamic of the 'Covid' hoax and you will see how that takes the same form. The inner-circle psychopaths knows it's a gigantic scam, but almost the entirety of those imposing their fascist rules believe that 'Covid' is all that they're told it is.

Stolen identity

Ask people who they are and they will give you their name, place of birth, location, job, family background and life story. Yet that is not who they are – it is what they are *experiencing*. The difference is *absolutely crucial*. The true 'I', the eternal, infinite 'I', is consciousness,

a state of being aware. Forget 'form'. That is a vehicle for a brief experience. Consciousness does not come *from* the brain, but *through* the brain and even that is more symbolic than literal. We are awareness, pure awareness, and this is what withdraws from the body at what we call 'death' to continue our eternal beingness, *isness*, in other realms of reality within the limitlessness of infinity or the Biblical 'many mansions in my father's house'. Labels of a human life, man, woman, transgender, black, white, brown, nationality, circumstances and income are not who we are. They are what we are – awareness – is *experiencing* in a brief connection with a band of frequency we call 'human'. The labels are not the self; they are, to use the title of one of my books, a *Phantom* Self. I am not David Icke born in Leicester, England, on April 29th, 1952. I am the consciousness *having that experience*. The Cult and its non-human masters seek to convince us through the institutions of 'education', science, medicine, media and government that what we are *experiencing* is who we *are*. It's so easy to control and direct perception locked away in the bewildered illusions of the five senses with no expanded radar. Try, by contrast, doing the same with a humanity aware of its true self and its true power to consciously create its reality and experience. How is it possible to do this? We do it all day every day. If you perceive yourself as 'little me' with no power to impact upon your life and the world then your life experience will reflect that. You will hand the power you don't think you have to authority in all its forms which will use it to control your experience. This, in turn, will appear to confirm your perception of 'little me' in a self-fulfilling feedback loop. But that is what 'little me' really is – a *perception*. We are all 'big-me', infinite me, and the Cult has to make us forget that if its will is to prevail. We are therefore manipulated and pressured into self-identifying with human labels and not the consciousness/awareness *experiencing* those human labels.

The phenomenon of identity politics is a Cult-instigated manipulation technique to sub-divide previous labels into even smaller ones. A United States university employs this list of letters to

describe student identity: LGBTTQQFAGPBDSM or lesbian, gay, bisexual, transgender, transsexual, queer, questioning, flexual, asexual, gender-fuck, polyamorous, bondage/discipline, dominance/submission and sadism/masochism. I'm sure other lists are even longer by now as people feel the need to self-identity the 'I' with the minutiae of race and sexual preference. Wokers programmed by the Cult for generations believe this is about 'inclusivity' when it's really the Cult locking them away into smaller and smaller versions of Phantom Self while firewalling them from the influence of their true self, the infinite, eternal 'I'. You may notice that my philosophy which contends that we are all unique points of attention/awareness within the same infinite whole or Oneness is the ultimate non-racism. The very sense of Oneness makes the judgement of people by their body-type, colour or sexuality utterly ridiculous and confirms that racism has no understanding of reality (including anti-white racism). Yet despite my perception of life Cult agents and fast-asleep Wokers label me racist to discredit my information while they are themselves phenomenally racist and sexist. All they see is race and sexuality and they judge people as good or bad, demons or untouchables, by their race and sexuality. All they see is *Phantom Self* and perceive themselves in terms of Phantom Self. They are pawns and puppets of the Cult agenda to focus attention and self-identity in the five senses and play those identities against each other to divide and rule. Columbia University has introduced segregated graduations in another version of social distancing designed to drive people apart and teach them that different racial and cultural groups have nothing in common with each other. The last thing the Cult wants is unity. Again the pump-primers of this will be Cult operatives in the knowledge of what they are doing, but the rest are just the Phantom Self blind leading the Phantom Self blind. We *do* have something in common – we are all *the same consciousness* having different temporary experiences.

What is this 'human'?

Yes, what *is* 'human'? That is what we are supposed to be, right? I mean 'human'? True, but 'human' is the experience not the 'I'. Break it down to basics and 'human' is the way that information is processed. If we are to experience and interact with this band of frequency we call the 'world' we must have a vehicle that operates within that band of frequency. Our consciousness in its prime form cannot do that; it is way beyond the frequency of the human realm. My consciousness or awareness could not tap these keys and pick up the cup in front of me in the same way that radio station A cannot interact with radio station B when they are on different frequencies. The human body is the means through which we have that interaction. I have long described the body as a biological computer which processes information in a way that allows consciousness to experience this reality. The body is a receiver, transmitter and processor of information in a particular way that we call human. We visually perceive only the world of the five senses in a wakened state – that is the limit of the body's visual decoding system. In truth it's not even visual in the way we experience 'visual reality' as I will come to in a moment. We are 'human' because the body processes the information sources of human into a reality and behaviour system that we *perceive* as human. Why does an elephant act like an elephant and not like a human or a duck? The elephant's biological computer is a different information field and processes information according to that program into a visual and behaviour type we call an elephant. The same applies to everything in our reality. These body information fields are perpetuated through procreation (like making a copy of a software program). The Cult wants to break that cycle and intervene technologically to transform the human information field into one that will change what we call humanity. If it can change the human information field it will change the way that field processes information and change humanity both 'physically' and psychologically. Hence the *messenger* (information) RNA 'vaccines' and so much more that is targeting human genetics by changing the body's information – *messaging* – construct through food, drink, radiation, toxicity and other means.

Reality that we experience is nothing like reality as it really is in the same way that the reality people experience in virtual reality games is not the reality they are really living in. The game is only a decoded source of information that appears to be a reality. Our world is also an information construct – a *simulation* (more later). In its base form our reality is a wavefield of information much the same in theme as Wi-Fi. The five senses decode wavefield information into electrical information which they communicate to the brain to decode into holographic (illusory 'physical') information. Different parts of the brain specialise in decoding different senses and the information is fused into a reality that appears to be outside of us but is really inside the brain and the genetic structure in general (Fig 12 overleaf). DNA is a receiver-transmitter of information and a vital part of this decoding process and the body's connection to other realities. Change DNA and you change the way we decode and connect with reality – see 'Covid vaccines'. Think of computers decoding Wi-Fi. You have information encoded in a radiation field and the computer decodes that information into a very different form on the screen. You can't see the Wi-Fi until its information is made manifest on the screen and the information on the screen is inside the computer and not outside. I have just described how we decode the 'human world'. All five senses decode the waveform 'Wi-Fi' field into electrical signals and the brain (computer) constructs reality inside the brain and not outside – 'You don't just look at a rainbow, you create it'. Sound is a simple example. We don't hear sound until the brain decodes it. Waveform sound waves are picked up by the hearing sense and communicated to the brain in an electrical form to be decoded into the sounds that we hear. Everything we hear is inside the brain along with everything we see, feel, smell and taste. Words and language are waveform fields generated by our vocal chords which pass through this process until they are decoded by the brain into words that we hear. Different languages are different frequency fields or sound waves generated by vocal chords. Late British philosopher Alan Watts said:

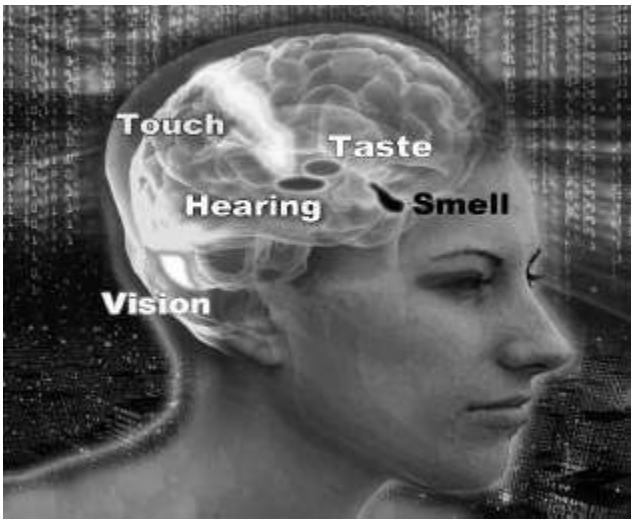

Figure 12: The brain receives information from the five senses and constructs from that our perceived reality.

[Without the brain] the world is devoid of light, heat, weight, solidity, motion, space, time or any other imaginable feature. All these phenomena are interactions, or transactions, of vibrations with a certain arrangement of neurons.

That's exactly what they are and scientist Robert Lanza describes in his book, *Biocentrism*, how we decode electromagnetic waves and energy into visual and 'physical' experience. He uses the example of a flame emitting photons, electromagnetic energy, each pulsing electrically and magnetically:

… these … invisible electromagnetic waves strike a human retina, and if (and only if) the waves happen to measure between 400 and 700 nano meters in length from crest to crest, then their energy is just right to deliver a stimulus to the 8 million cone-shaped cells in the retina.

Each in turn send an electrical pulse to a neighbour neuron, and on up the line this goes, at 250 mph, until it reaches the … occipital lobe of the brain, in the back of the head. There, a cascading complex of neurons fire from the incoming stimuli, and we subjectively perceive this experience as a yellow brightness occurring in a place we have been conditioned to call the 'external world'.

You hear what you decode

If a tree falls or a building collapses they make no noise unless someone is there to decode the energetic waves generated by the disturbance into what we call sound. Does a falling tree make a noise? Only if you hear it – *decode* it. Everything in our reality is a frequency field of information operating within the overall 'Wi-Fi' field that I call The Field. A vibrational disturbance is generated in The Field by the fields of the falling tree or building. These disturbance waves are what we decode into the sound of them falling. If no one is there to do that then neither will make any noise. Reality is created by the observer – *decoder* – and the *perceptions* of the observer affect the decoding process. For this reason different people – different *perceptions* – will perceive the same reality or situation in a different way. What one may perceive as a nightmare another will see as an opportunity. The question of why the Cult is so focused on controlling human perception now answers itself. All experienced reality is the act of decoding and we don't experience Wi-Fi until it is decoded on the computer screen. The sight and sound of an Internet video is encoded in the Wi-Fi all around us, but we don't see or hear it until the computer decodes that information. Taste, smell and touch are all phenomena of the brain as a result of the same process. We don't taste, smell or feel anything except in the brain and there are pain relief techniques that seek to block the signal from the site of discomfort to the brain because if the brain doesn't decode that signal we don't feel pain. Pain is in the brain and only appears to be at the point of impact thanks to the feedback loop between them. We don't see anything until electrical information from the sight senses is decoded in an area at the back of the brain. If that area is damaged we can go blind when our eyes are perfectly okay. So why do we go blind if we damage an eye? We damage the information processing between the waveform visual information and the visual decoding area of the brain. If information doesn't reach the brain in a form it can decode then we can't see the visual reality that it represents. What's more the brain is decoding only a fraction of the information it receives and the rest is absorbed by the

sub-conscious mind. This explanation is from the science magazine, *Wonderpedia*:

> Every second, 11 million sensations crackle along these [brain] pathways ... The brain is confronted with an alarming array of images, sounds and smells which it rigorously filters down until it is left with a manageable list of around 40. Thus 40 sensations per second make up what we perceive as reality.

The 'world' is not what people are told to believe that is it and the inner circles of the Cult *know that*.

Illusory 'physical' reality

We can only see a smear of 0.005 percent of the Universe which is only one of a vast array of universes – 'mansions' – within infinite reality. Even then the brain decodes only 40 pieces of information ('sensations') from a potential *11 million* that we receive every second. Two points strike you from this immediately: The sheer breathtaking stupidity of believing we know anything so rigidly that there's nothing more to know; and the potential for these processes to be manipulated by a malevolent force to control the reality of the population. One thing I can say for sure with no risk of contradiction is that when you can perceive an almost indescribable fraction of infinite reality there is always more to know as in tidal waves of it. Ancient Greek philosopher Socrates was so right when he said that wisdom is to know how little we know. How obviously true that is when you think that we are experiencing a physical world of solidity that is neither physical nor solid and a world of apartness when everything is connected. Cult-controlled 'science' dismisses the so-called 'paranormal' and all phenomena related to that when the 'para'-normal is perfectly normal and explains the alleged 'great mysteries' which dumbfound scientific minds. There is a reason for this. A 'scientific mind' in terms of the mainstream is a material mind, a five-sense mind imprisoned in see it, touch it, hear it, smell it and taste it. Phenomena and happenings that can't be explained that way leave the 'scientific mind' bewildered and the rule is that if they

can't account for why something is happening then it can't, by definition, be happening. I beg to differ. Telepathy is thought waves passing through The Field (think wave disturbance again) to be decoded by someone able to connect with that wavelength (information). For example: You can pick up the thought waves of a friend at any distance and at the very least that will bring them to mind. A few minutes later the friend calls you. 'My god', you say, 'that's incredible – I was just thinking of you.' Ah, but *they* were thinking of *you* before they made the call and that's what you decoded. Native peoples not entrapped in five-sense reality do this so well it became known as the 'bush telegraph'. Those known as psychics and mediums (genuine ones) are doing the same only across dimensions of reality. 'Mind over matter' comes from the fact that matter and mind are the *same*. The state of one influences the state of the other. Indeed one *and* the other are illusions. They are aspects of the same field. Paranormal phenomena are all explainable so why are they still considered 'mysteries' or not happening? Once you go down this road of understanding you begin to expand awareness beyond the five senses and that's the nightmare for the Cult.

Figure 13: Holograms are not solid, but the best ones appear to be.

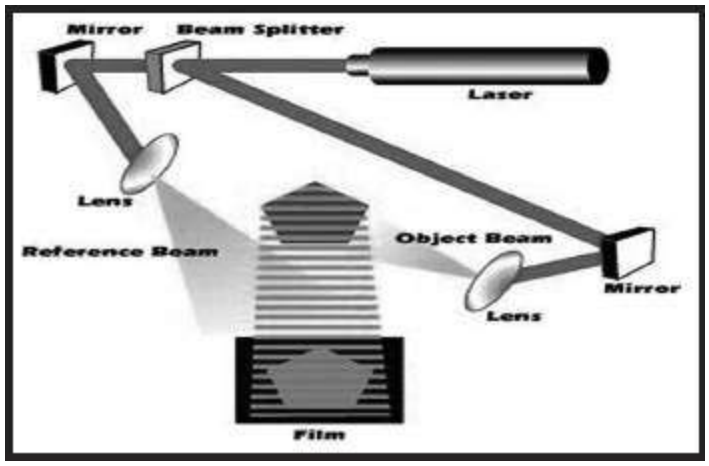

Figure 14: How holograms are created by capturing a waveform version of the subject image.

Holographic 'solidity'

Our reality is not solid, it is holographic. We are now well aware of holograms which are widely used today. Two-dimensional information is decoded into a three-dimensional reality that is not solid although can very much appear to be (Fig 13). Holograms are created with a laser divided into two parts. One goes directly onto a holographic photographic print ('reference beam') and the other takes a waveform image of the subject ('working beam') before being directed onto the print where it 'collides' with the other half of the laser (Fig 14). This creates a *waveform* interference pattern which contains the wavefield information of whatever is being photographed (Fig 15 overleaf). The process can be likened to dropping pebbles in a pond. Waves generated by each one spread out across the water to collide with the others and create a wave representation of where the stones fell and at what speed, weight and distance. A waveform interference pattern of a hologram is akin to the waveform information in The Field which the five senses decode into electrical signals to be decoded by the brain into a holographic illusory 'physical' reality. In the same way when a laser (think human attention) is directed at the waveform interference pattern a three-dimensional version of the subject is projected into apparently 'solid' reality (Fig 16). An amazing trait of holograms reveals more 'paranormal mysteries'. Information of the *whole*

hologram is encoded in waveform in every part of the interference pattern by the way they are created. This means that every *part* of a hologram is a smaller version of the whole. Cut the interference wave-pattern into four and you won't get four parts of the image. You get quarter-sized versions of the *whole* image. The body is a hologram and the same applies. Here we have the basis of acupuncture, reflexology and other forms of healing which identify representations of the whole body in all of the parts, hands, feet, ears, everywhere. Skilled palm readers can do what they do because the information of whole body is encoded in the hand. The concept of as above, so below, comes from this.

Figure 15: A waveform interference pattern that holds the information that transforms into a hologram.

Figure 16: Holographic people including 'Elvis' holographically inserted to sing a duet with Celine Dion.

The question will be asked of why, if solidity is illusory, we can't just walk through walls and each other. The resistance is not solid against solid; it is electromagnetic field against electromagnetic field and we decode this into the *experience* of solid against solid. We should also not underestimate the power of belief to dictate reality. What you believe is impossible *will be*. Your belief impacts on your decoding processes and they won't decode what you think is impossible. What we believe we perceive and what we perceive we experience. 'Can't dos' and 'impossibles' are like a firewall in a computer system that won't put on the screen what the firewall blocks. How vital that is to understanding how human experience has been hijacked. I explain in *The Answer*, *Everything You Need To Know But Have Never Been Told* and other books a long list of 'mysteries' and 'paranormal' phenomena that are not mysterious and perfectly normal once you realise what reality is and how it works. 'Ghosts' can be seen to pass through 'solid' walls because the walls are not solid and the ghost is a discarnate entity operating on a frequency so different to that of the wall that it's like two radio stations sharing the same space while never interfering with each other. I have seen ghosts do this myself. The apartness of people and objects is also an illusion. Everything is connected by the Field like all sea life is connected by the sea. It's just that within the limits of our visual reality we only 'see' holographic information and not the field of information that connects everything and from which the holographic world is made manifest. If you can only see holographic 'objects' and not the field that connects them they will appear to you as unconnected to each other in the same way that we see the computer while not seeing the Wi-Fi.

What you don't know *can* hurt you

Okay, we return to those 'two worlds' of human society and the Cult with its global network of interconnecting secret societies and satanic groups which manipulate through governments, corporations, media, religions, etc. The fundamental difference between them is *knowledge*. The idea has been to keep humanity

ignorant of the plan for its total enslavement underpinned by a crucial ignorance of reality – who we are and where we are – and how we interact with it. 'Human' should be the interaction between our expanded eternal consciousness and the five-sense body experience. We are meant to be *in* this world in terms of the five senses but not *of* this world in relation to our greater consciousness and perspective. In that state we experience the small picture of the five senses within the wider context of the big picture of awareness beyond the five senses. Put another way the five senses see the dots and expanded awareness connects them into pictures and patterns that give context to the apparently random and unconnected. Without the context of expanded awareness the five senses see only apartness and randomness with apparently no meaning. The Cult and its other-dimensional controllers seek to intervene in the frequency realm where five-sense reality is supposed to connect with expanded reality and to keep the two apart (more on this in the final chapter). When that happens five-sense mental and emotional processes are no longer influenced by expanded awareness, or the True 'I', and instead are driven by the isolated perceptions of the body's decoding systems. They are in the world *and* of it. Here we have the human plight and why humanity with its potential for infinite awareness can be so easily manipulatable and descend into such extremes of stupidity.

Once the Cult isolates five-sense mind from expanded awareness it can then program the mind with perceptions and beliefs by controlling information that the mind receives through the 'education' system of the formative years and the media perceptual bombardment and censorship of an entire lifetime. Limit perception and a sense of the possible through limiting knowledge by limiting and skewing information while censoring and discrediting that which could set people free. As the title of another of my books says *… And The Truth Shall Set You Free*. For this reason the last thing the Cult wants in circulation is the truth about anything – especially the reality of the eternal 'I' – and that's why it is desperate to control information. The Cult knows that information becomes perception

which becomes behaviour which, collectively, becomes human society. Cult-controlled and funded mainstream 'science' denies the existence of an eternal 'I' and seeks to dismiss and trash all evidence to the contrary. Cult-controlled mainstream religion has a version of 'God' that is little more than a system of control and dictatorship that employs threats of damnation in an afterlife to control perceptions and behaviour in the here and now through fear and guilt. Neither is true and it's the 'neither' that the Cult wishes to suppress. This 'neither' is that everything is an expression, a point of attention, within an infinite state of consciousness which is the real meaning of the term 'God'.

Perceptual obsession with the 'physical body' and five-senses means that 'God' becomes personified as a bearded bloke sitting among the clouds or a raging bully who loves us if we do what 'he' wants and condemns us to the fires of hell if we don't. These are no more than a 'spiritual' fairy tales to control and dictate events and behaviour through fear of this 'God' which has bizarrely made 'God-fearing' in religious circles a state to be desired. I would suggest that fearing *anything* is not to be encouraged and celebrated, but rather deleted. You can see why 'God fearing' is so beneficial to the Cult and its religions when *they* decide what 'God' wants and what 'God' demands (the Cult demands) that everyone do. As the great American comedian Bill Hicks said satirising a Christian zealot: 'I think what God meant to say.' How much of this infinite awareness ('God') that we access is decided by how far we choose to expand our perceptions, self-identity and sense of the possible. The scale of self-identity reflects itself in the scale of awareness that we can connect with and are influenced by – how much knowing and insight we have instead of programmed perception. You cannot expand your awareness into the infinity of possibility when you believe that you are little me Peter the postman or Mary in marketing and nothing more. I'll deal with this in the concluding chapter because it's crucial to how we turnaround current events.

Where the Cult came from

When I realised in the early 1990s there was a Cult network behind global events I asked the obvious question: When did it start? I took it back to ancient Rome and Egypt and on to Babylon and Sumer in Mesopotamia, the 'Land Between Two Rivers', in what we now call Iraq. The two rivers are the Tigris and Euphrates and this region is of immense historical and other importance to the Cult, as is the land called Israel only 550 miles away by air. There is much more going with deep esoteric meaning across this whole region. It's not only about 'wars for oil'. Priceless artefacts from Mesopotamia were stolen or destroyed after the American and British invasion of Iraq in 2003 justified by the lies of Boy Bush and Tony Blair (their Cult masters) about non-existent 'weapons of mass destruction'. Mesopotamia was the location of Sumer (about 5,400BC to 1,750BC), and Babylon (about 2,350BC to 539BC). Sabbatians may have become immensely influential in the Cult in modern times but they are part of a network that goes back into the mists of history. Sumer is said by historians to be the 'cradle of civilisation'. I disagree. I say it was the re-start of what we call human civilisation after cataclysmic events symbolised in part as the 'Great Flood' destroyed the world that existed before. These fantastic upheavals that I have been describing in detail in the books since the early1990s appear in accounts and legends of ancient cultures across the world and they are supported by geological and biological evidence. Stone tablets found in Iraq detailing the Sumer period say the cataclysms were caused by non-human 'gods' they call the Anunnaki. These are described in terms of extraterrestrial visitations in which knowledge supplied by the Anunnaki is said to have been the source of at least one of the world's oldest writing systems and developments in astronomy, mathematics and architecture that were way ahead of their time. I have covered this subject at length in *The Biggest Secret* and *Children of the Matrix* and the same basic 'Anunnaki' story can be found in Zulu accounts in South Africa where the late and very great Zulu high shaman Credo Mutwa told me that the Sumerian Anunnaki were known by Zulus as the Chitauri or 'children of the serpent'. See my six-hour video interview with Credo on this subject entitled *The*

Reptilian Agenda recorded at his then home near Johannesburg in 1999 which you can watch on the Ickonic media platform.

The Cult emerged out of Sumer, Babylon and Egypt (and elsewhere) and established the Roman Empire before expanding with the Romans into northern Europe from where many empires were savagely imposed in the form of Cult-controlled societies all over the world. Mass death and destruction was their calling card. The Cult established its centre of operations in Europe and European Empires were Cult empires which allowed it to expand into a global force. Spanish and Portuguese colonialists headed for Central and South America while the British and French targeted North America. Africa was colonised by Britain, France, Belgium, the Netherlands, Portugal, Spain, Italy, and Germany. Some like Britain and France moved in on the Middle East. The British Empire was by far the biggest for a simple reason. By now Britain was the headquarters of the Cult from which it expanded to form Canada, the United States, Australia and New Zealand. The Sun never set on the British Empire such was the scale of its occupation. London remains a global centre for the Cult along with Rome and the Vatican although others have emerged in Israel and China. It is no accident that the 'virus' is alleged to have come out of China while Italy was chosen as the means to terrify the Western population into compliance with 'Covid' fascism. Nor that Israel has led the world in 'Covid' fascism and mass 'vaccination'.

You would think that I would mention the United States here, but while it has been an important means of imposing the Cult's will it is less significant than would appear and is currently in the process of having what power it does have deleted. The Cult in Europe has mostly loaded the guns for the US to fire. America has been controlled from Europe from the start through Cult operatives in Britain and Europe. The American Revolution was an illusion to make it appear that America was governing itself while very different forces were pulling the strings in the form of Cult families such as the Rothschilds through the Rockefellers and other subordinates. The Rockefellers are extremely close to Bill Gates and

established both scalpel and drug 'medicine' and the World Health Organization. They play a major role in the development and circulation of vaccines through the Rockefeller Foundation on which Bill Gates said his Foundation is based. Why wouldn't this be the case when the Rockefellers and Gates are on the same team? Cult infiltration of human society goes way back into what we call history and has been constantly expanding and centralising power with the goal of establishing a global structure to dictate everything. Look how this has been advanced in great leaps with the 'Covid' hoax.

The non-human dimension

I researched and observed the comings and goings of Cult operatives through the centuries and even thousands of years as they were born, worked to promote the agenda within the secret society and satanic networks, and then died for others to replace them. Clearly there had to be a coordinating force that spanned this entire period while operatives who would not have seen the end goal in their lifetimes came and went advancing the plan over millennia. I went in search of that coordinating force with the usual support from the extraordinary synchronicity of my life which has been an almost daily experience since 1990. I saw common themes in religious texts and ancient cultures about a non-human force manipulating human society from the hidden. Christianity calls this force Satan, the Devil and demons; Islam refers to the Jinn or Djinn; Zulus have their Chitauri (spelt in other ways in different parts of Africa); and the Gnostic people in Egypt in the period around and before 400AD referred to this phenomena as the 'Archons', a word meaning rulers in Greek. Central American cultures speak of the 'Predators' among other names and the same theme is everywhere. I will use 'Archons' as a collective name for all of them. When you see how their nature and behaviour is described all these different sources are clearly talking about the same force. Gnostics described the Archons in terms of 'luminous fire' while Islam relates the Jinn to 'smokeless fire'. Some refer to beings in form that could occasionally be seen, but the most common of common theme is that they operate from

unseen realms which means almost all existence to the visual processes of humans. I had concluded that this was indeed the foundation of human control and that the Cult was operating within the human frequency band on behalf of this hidden force when I came across the writings of Gnostics which supported my conclusions in the most extraordinary way.

A sealed earthen jar was found in 1945 near the town of Nag Hammadi about 75-80 miles north of Luxor on the banks of the River Nile in Egypt. Inside was a treasure trove of manuscripts and texts left by the Gnostic people some 1,600 years earlier. They included 13 leather-bound papyrus codices (manuscripts) and more than 50 texts written in Coptic Egyptian estimated to have been hidden in the jar in the period of 400AD although the source of the information goes back much further. Gnostics oversaw the Great or Royal Library of Alexandria, the fantastic depository of ancient texts detailing advanced knowledge and accounts of human history. The Library was dismantled and destroyed in stages over a long period with the death-blow delivered by the Cult-established Roman Church in the period around 415AD. The Church of Rome was the Church of Babylon relocated as I said earlier. Gnostics were not a race. They were a way of perceiving reality. Whenever they established themselves and their information circulated the terrorists of the Church of Rome would target them for destruction. This happened with the Great Library and with the Gnostic Cathars who were burned to death by the psychopaths after a long period of oppression at the siege of the Castle of Monségur in southern France in 1244. The Church has always been terrified of Gnostic information which demolishes the official Christian narrative although there is much in the Bible that supports the Gnostic view if you read it in another way. To anyone studying the texts of what became known as the Nag Hammadi Library it is clear that great swathes of Christian and Biblical belief has its origin with Gnostics sources going back to Sumer. Gnostic themes have been twisted to manipulate the perceived reality of Bible believers. Biblical texts have been in the open for centuries where they could be changed while Gnostic

documents found at Nag Hammadi were sealed away and untouched for 1,600 years. What you see is what they wrote.

Use your *pneuma* not your *nous*

Gnosticism and Gnostic come from 'gnosis' which means knowledge, or rather *secret* knowledge, in the sense of spiritual awareness – knowledge about reality and life itself. The desperation of the Cult's Church of Rome to destroy the Gnostics can be understood when the knowledge they were circulating was the last thing the Cult wanted the population to know. Sixteen hundred years later the same Cult is working hard to undermine and silence me for the same reason. The dynamic between knowledge and ignorance is a constant. 'Time' appears to move on, but essential themes remain the same. We are told to 'use your nous', a Gnostic word for head/brain/intelligence. They said, however, that spiritual awakening or 'salvation' could only be secured by expanding awareness *beyond* what they called *nous* and into *pneuma* or Infinite Self. Obviously as I read these texts the parallels with what I have been saying since 1990 were fascinating to me. There is a universal truth that spans human history and in that case why wouldn't we be talking the same language 16 centuries apart? When you free yourself from the perception program of the five senses and explore expanded realms of consciousness you are going to connect with the same information no matter what the perceived 'era' within a manufactured timeline of a single and tiny range of manipulated frequency. Humans working with 'smart' technology or knocking rocks together in caves is only a timeline appearing to operate within the human frequency band. Expanded awareness and the knowledge it holds have always been there whether the era be Stone Age or computer age. We can only access that knowledge by opening ourselves to its frequency which the five-sense prison cell is designed to stop us doing. Gates, Fauci, Whitty, Vallance, Zuckerberg, Brin, Page, Wojcicki, Bezos, and all the others behind the 'Covid' hoax clearly have a long wait before their range of frequency can make that connection given that an open heart is

crucial to that as we shall see. Instead of accessing knowledge directly through expanded awareness it is given to Cult operatives by the secret society networks of the Cult where it has been passed on over thousands of years outside the public arena. Expanded realms of consciousness is where great artists, composers and writers find their inspiration and where truth awaits anyone open enough to connect with it. We need to go there fast.

Archon hijack

A fifth of the Nag Hammadi texts describe the existence and manipulation of the Archons led by a 'Chief Archon' they call 'Yaldabaoth', or the 'Demiurge', and this is the Christian 'Devil', 'Satan', 'Lucifer', and his demons. Archons in Biblical symbolism are the 'fallen ones' which are also referred to as fallen angels after the angels expelled from heaven according to the Abrahamic religions of Judaism, Christianity and Islam. These angels are claimed to tempt humans to 'sin' ongoing and you will see how accurate that symbolism is during the rest of the book. The theme of 'original sin' is related to the 'Fall' when Adam and Eve were 'tempted by the serpent' and fell from a state of innocence and 'obedience' (connection) with God into a state of disobedience (disconnection). The Fall is said to have brought sin into the world and corrupted everything including human nature. Yaldabaoth, the 'Lord Archon', is described by Gnostics as a 'counterfeit spirit', 'The Blind One', 'The Blind God', and 'The Foolish One'. The Jewish name for Yaldabaoth in Talmudic writings is Samael which translates as 'Poison of God', or 'Blindness of God'. You see the parallels. Yaldabaoth in Islamic belief is the Muslim Jinn devil known as Shaytan – Shaytan is Satan as the same themes are found all over the world in every religion and culture. The 'Lord God' of the Old Testament is the 'Lord Archon' of Gnostic manuscripts and that's why he's such a bloodthirsty bastard. Satan is known by Christians as 'the Demon of Demons' and Gnostics called Yaldabaoth the 'Archon of Archons'. Both are known as 'The Deceiver'. We are talking about the same 'bloke' for sure and these common themes

using different names, storylines and symbolism tell a common tale of the human plight.

Archons are referred to in Nag Hammadi documents as mind parasites, inverters, guards, gatekeepers, detainers, judges, pitiless ones and deceivers. The 'Covid' hoax alone is a glaring example of all these things. The Biblical 'God' is so different in the Old and New Testaments because they are not describing the same phenomenon. The vindictive, angry, hate-filled, 'God' of the Old Testament, known as Yahweh, is Yaldabaoth who is depicted in Cult-dictated popular culture as the 'Dark Lord', 'Lord of Time', Lord (Darth) Vader and Dormammu, the evil ruler of the 'Dark Dimension' trying to take over the 'Earth Dimension' in the Marvel comic movie, *Dr Strange*. Yaldabaoth is both the Old Testament 'god' and the Biblical 'Satan'. Gnostics referred to Yaldabaoth as the 'Great Architect of the Universe'and the Cult-controlled Freemason network calls their god 'the 'Great Architect of the Universe' (also Grand Architect). The 'Great Architect' Yaldabaoth is symbolised by the Cult as the all-seeing eye at the top of the pyramid on the Great Seal of the United States and the dollar bill. Archon is encoded in *arch*-itect as it is in *arch*-angels and *arch*-bishops. All religions have the theme of a force for good and force for evil in some sort of spiritual war and there is a reason for that – the theme is true. The Cult and its non-human masters are quite happy for this to circulate. They present themselves as the force for good fighting evil when they are really the force of evil (absence of love). The whole foundation of Cult modus operandi is inversion. They promote themselves as a force for good and anyone challenging them in pursuit of peace, love, fairness, truth and justice is condemned as a satanic force for evil. This has been the game plan throughout history whether the Church of Rome inquisitions of non-believers or 'conspiracy theorists' and 'anti-vaxxers' of today. The technique is the same whatever the timeline era.

Yaldabaoth is revolting (true)

Yaldabaoth and the Archons are said to have revolted against God with Yaldabaoth claiming to *be* God – the *All That Is*. The Old Testament 'God' (Yaldabaoth) demanded to be worshipped as such: ' *I am* the LORD, and there is none else, there is no God beside me' (Isaiah 45:5). I have quoted in other books a man who said he was the unofficial son of the late Baron Philippe de Rothschild of the Mouton-Rothschild wine producing estates in France who died in 1988 and he told me about the Rothschild 'revolt from God'. The man said he was given the name Phillip Eugene de Rothschild and we shared long correspondence many years ago while he was living under another identity. He said that he was conceived through 'occult incest' which (within the Cult) was 'normal and to be admired'. 'Phillip' told me about his experience attending satanic rituals with rich and famous people whom he names and you can see them and the wider background to Cult Satanism in my other books starting with *The Biggest Secret*. Cult rituals are interactions with Archontic 'gods'. 'Phillip' described Baron Philippe de Rothschild as 'a master Satanist and hater of God' and he used the same term 'revolt from God' associated with Yaldabaoth/Satan/Lucifer/the Devil in describing the Sabbatian Rothschild dynasty. 'I played a key role in my family's revolt from God', he said. That role was to infiltrate in classic Sabbatian style the Christian Church, but eventually he escaped the mind-prison to live another life. The Cult has been targeting religion in a plan to make worship of the Archons the global one-world religion. Infiltration of Satanism into modern 'culture', especially among the young, through music videos, stage shows and other means, is all part of this.

Nag Hammadi texts describe Yaldabaoth and the Archons in their prime form as energy – consciousness – and say they can take form if they choose in the same way that consciousness takes form as a human. Yaldabaoth is called 'formless' and represents a deeply inverted, distorted and chaotic state of consciousness which seeks to attached to humans and turn them into a likeness of itself in an attempt at assimilation. For that to happen it has to manipulate

humans into low frequency mental and emotional states that match its own. Archons can certainly appear in human form and this is the origin of the psychopathic personality. The energetic distortion Gnostics called Yaldabaoth *is* psychopathy. When psychopathic Archons take human form that human will be a psychopath as an expression of Yaldabaoth consciousness. Cult psychopaths are Archons in human form. The principle is the same as that portrayed in the 2009 *Avatar* movie when the American military travelled to a fictional Earth-like moon called Pandora in the Alpha Centauri star system to infiltrate a society of blue people, or Na'vi, by hiding within bodies that looked like the Na'vi. Archons posing as humans have a particular hybrid information field, part human, part Archon, (the ancient 'demigods') which processes information in a way that manifests behaviour to match their psychopathic evil, lack of empathy and compassion, and stops them being influenced by the empathy, compassion and love that a fully-human information field is capable of expressing. Cult bloodlines interbreed, be they royalty or dark suits, for this reason and you have their obsession with incest. Interbreeding with full-blown humans would dilute the Archontic energy field that guarantees psychopathy in its representatives in the human realm.

Gnostic writings say the main non-human forms that Archons take are *serpentine* (what I have called for decades 'reptilian' amid unbounded ridicule from the Archontically-programmed) and what Gnostics describe as 'an unborn baby or foetus with grey skin and dark, unmoving eyes'. This is an excellent representation of the ET 'Greys' of UFO folklore which large numbers of people claim to have seen and been abducted by – Zulu shaman Credo Mutwa among them. I agree with those that believe in extraterrestrial or interdimensional visitations today and for thousands of years past. No wonder with their advanced knowledge and technological capability they were perceived and worshipped as gods for technological and other 'miracles' they appeared to perform. Imagine someone arriving in a culture disconnected from the modern world with a smartphone and computer. They would be

seen as a 'god' capable of 'miracles'. The Renegade Mind, however, wants to know the source of everything and not only the way that source manifests as human or non-human. In the same way that a Renegade Mind seeks the original source material for the 'Covid virus' to see if what is claimed is true. The original source of Archons in form is consciousness – the distorted state of consciousness known to Gnostics as Yaldabaoth.

'Revolt from God' is energetic disconnection

Where I am going next will make a lot of sense of religious texts and ancient legends relating to 'Satan', Lucifer' and the 'gods'. Gnostic descriptions sync perfectly with the themes of my own research over the years in how they describe a consciousness distortion seeking to impose itself on human consciousness. I've referred to the core of infinite awareness in previous books as Infinite Awareness in Awareness of Itself. By that I mean a level of awareness that knows that it is all awareness and is aware of all awareness. From here comes the frequency of love in its true sense and balance which is what love is on one level – the balance of all forces into a single whole called Oneness and Isness. The more we disconnect from this state of love that many call 'God' the constituent parts of that Oneness start to unravel and express themselves as a part and not a whole. They become individualised as intellect, mind, selfishness, hatred, envy, desire for power over others, and such like. This is not a problem in the greater scheme in that 'God', the *All That Is*, can experience all these possibilities through different expressions of itself including humans. What we as expressions of the whole experience the *All That Is* experiences. We are the *All That Is* experiencing itself. As we withdraw from that state of Oneness we disconnect from its influence and things can get very unpleasant and very stupid. Archontic consciousness is at the extreme end of that. It has so disconnected from the influence of Oneness that it has become an inversion of unity and love, an inversion of everything, an inversion of life itself. Evil is appropriately live written backwards. Archontic consciousness is obsessed with death, an inversion of life,

and so its manifestations in Satanism are obsessed with death. They use inverted symbols in their rituals such as the inverted pentagram and cross. Sabbatians as Archontic consciousness incarnate invert Judaism and every other religion and culture they infiltrate. They seek disunity and chaos and they fear unity and harmony as they fear love like garlic to a vampire. As a result the Cult, Archons incarnate, act with such evil, psychopathy and lack of empathy and compassion disconnected as they are from the source of love. How could Bill Gates and the rest of the Archontic psychopaths do what they have to human society in the 'Covid' era with all the death, suffering and destruction involved and have no emotional consequence for the impact on others? Now you know. Why have Zuckerberg, Brin, Page, Wojcicki and company callously censored information warning about the dangers of the 'vaccine' while thousands have been dying and having severe, sometimes life-changing reactions? Now you know. Why have Tedros, Fauci, Whitty, Vallance and their like around the world been using case and death figures they're aware are fraudulent to justify lockdowns and all the deaths and destroyed lives that have come from that? Now you know. Why did Christian Drosten produce and promote a 'testing' protocol that he knew couldn't test for infectious disease which led to a global human catastrophe. Now you know. The Archontic mind doesn't give a shit (Fig 17). I personally think that Gates and major Cult insiders are a form of AI cyborg that the Archons want humans to become.

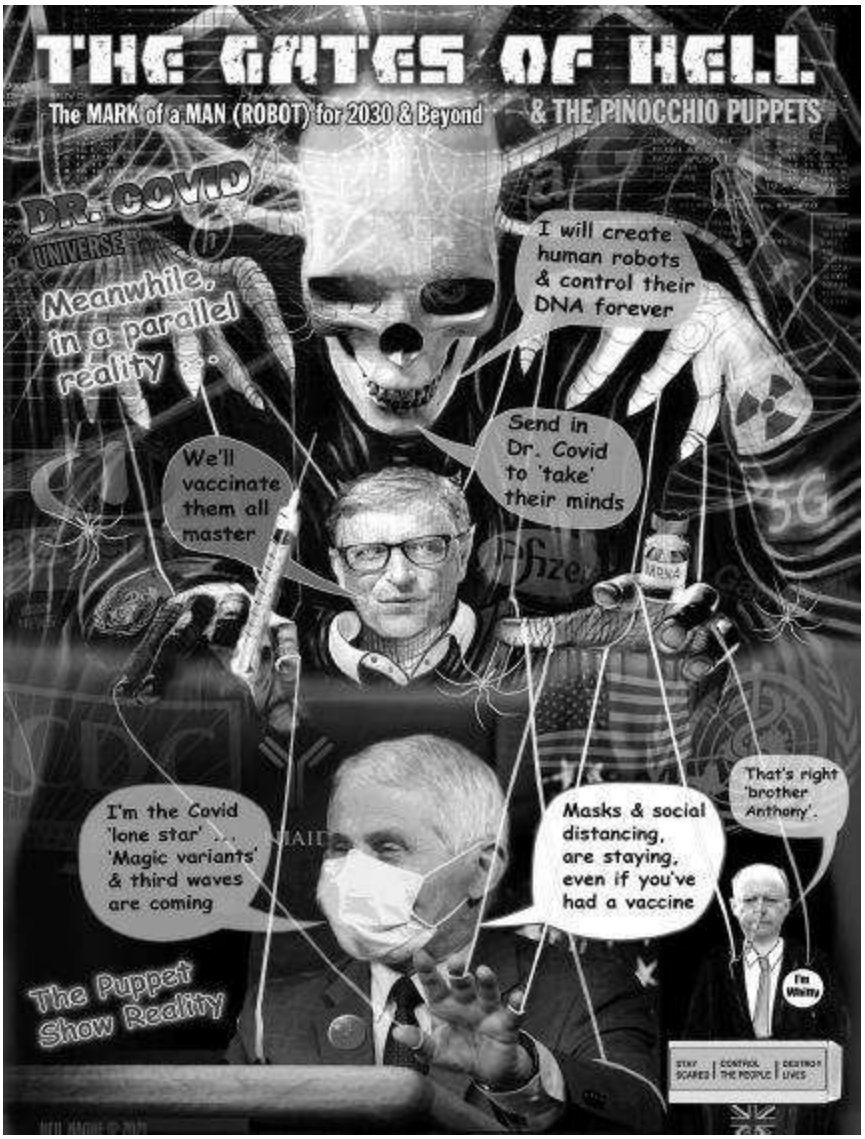
THE GATES OF HELL
The MARK of a MAN (ROBOT) for 2030 & Beyond
& THE PINOCCHIO PUPPETS
DR. COVID
UNIVERSE
Meanwhile, in a parallel reality ...
I will create human robots & control their DNA forever
Send in Dr. Covid to 'take' their minds
We'll vaccinate them all master
5G
I'm the Covid 'lone star' ... 'Magic variants' & third waves are coming
Masks & social distancing, are staying, even if you've had a vaccine
That's right 'brother Anthony'.
I'm Whitty
The Puppet Show Reality

Figure 17: Artist Neil Hague's version of the 'Covid' hierarchy.

Human batteries

A state of such inversion does have its consequences, however. The level of disconnection from the Source of All means that you withdraw from that source of energetic sustenance and creativity. This means that you have to find your own supply of energetic power and it has – *us*. When the Morpheus character in the first *Matrix* movie held up a battery he spoke a profound truth when he said: 'The Matrix is a computer-generated dream world built to keep us under control in order to change the human being into one of

these.' The statement was true in all respects. We do live in a technologically-generated virtual reality simulation (more very shortly) and we have been manipulated to be an energy source for Archontic consciousness. The Disney-Pixar animated movie *Monsters, Inc*. in 2001 symbolised the dynamic when monsters in their world had no energy source and they would enter the human world to terrify children in their beds, catch the child's scream, terror (low-vibrational frequencies), and take that energy back to power the monster world. The lead character you might remember was a single giant eye and the symbolism of the Cult's all-seeing eye was obvious. Every thought and emotion is broadcast as a frequency unique to that thought and emotion. Feelings of love and joy, empathy and compassion, are high, quick, frequencies while fear, depression, anxiety, suffering and hate are low, slow, dense frequencies. Which kind do you think Archontic consciousness can connect with and absorb? In such a low and dense frequency state there's no way it can connect with the energy of love and joy. Archons can only feed off energy compatible with their own frequency and they and their Cult agents want to delete the human world of love and joy and manipulate the transmission of low vibrational frequencies through low-vibrational human mental and emotional states. *We are their energy source*. Wars are energetic banquets to the Archons – a world war even more so – and think how much low-frequency mental and emotional energy has been generated from the consequences for humanity of the 'Covid' hoax orchestrated by Archons incarnate like Gates.

The ancient practice of human sacrifice 'to the gods', continued in secret today by the Cult, is based on the same principle. 'The gods' are Archontic consciousness in different forms and the sacrifice is induced into a state of intense terror to generate the energy the Archontic frequency can absorb. Incarnate Archons in the ritual drink the blood which contains an adrenaline they crave which floods into the bloodstream when people are terrorised. Most of the sacrifices, ancient and modern, are children and the theme of 'sacrificing young virgins to the gods' is just code for children. They

have a particular pre-puberty energy that Archons want more than anything and the energy of the young in general is their target. The California Department of Education wants students to chant the names of Aztec gods (Archontic gods) once worshipped in human sacrifice rituals in a curriculum designed to encourage them to 'challenge racist, bigoted, discriminatory, imperialist/colonial beliefs', join 'social movements that struggle for social justice', and 'build new possibilities for a post-racist, post-systemic racism society'. It's the usual Woke crap that inverts racism and calls it anti-racism. In this case solidarity with 'indigenous tribes' is being used as an excuse to chant the names of 'gods' to which people were sacrificed (and still are in secret). What an example of Woke's inability to see beyond black and white, us and them, They condemn the colonisation of these tribal cultures by Europeans (quite right), but those cultures sacrificing people including children to their 'gods', and mass murdering untold numbers as the Aztecs did, is just fine. One chant is to the Aztec god Tezcatlipoca who had a man sacrificed to him in the 5th month of the Aztec calendar. His heart was cut out and he was eaten. Oh, that's okay then. Come on children … after three … Other sacrificial 'gods' for the young to chant their allegiance include Quetzalcoatl, Huitzilopochtli and Xipe Totec. The curriculum says that 'chants, affirmations, and energizers can be used to bring the class together, build unity around ethnic studies principles and values, and to reinvigorate the class following a lesson that may be emotionally taxing or even when student engagement may appear to be low'. Well, that's the cover story, anyway. Chanting and mantras are the repetition of a particular frequency generated from the vocal cords and chanting the names of these Archontic 'gods' tunes you into their frequency. That is the last thing you want when it allows for energetic synchronisation, attachment and perceptual influence. Initiates chant the names of their 'Gods' in their rituals for this very reason.

Vampires of the Woke

Paedophilia is another way that Archons absorb the energy of children. Paedophiles possessed by Archontic consciousness are used as the conduit during sexual abuse for discarnate Archons to vampire the energy of the young they desire so much. Stupendous numbers of children disappear every year never to be seen again although you would never know from the media. Imagine how much low-vibrational energy has been generated by children during the 'Covid' hoax when so many have become depressed and psychologically destroyed to the point of killing themselves. Shocking numbers of children are now taken by the state from loving parents to be handed to others. I can tell you from long experience of researching this since 1996 that many end up with paedophiles and assets of the Cult through corrupt and Cult-owned social services which in the reframing era has hired many psychopaths and emotionless automatons to do the job. Children are even stolen to order using spurious reasons to take them by the corrupt and secret (because they're corrupt) 'family courts'. I have written in detail in other books, starting with *The Biggest Secret* in 1997, about the ubiquitous connections between the political, corporate, government, intelligence and military elites (Cult operatives) and Satanism and paedophilia. If you go deep enough both networks have an interlocking leadership. The Woke mentality has been developed by the Cult for many reasons: To promote almost every aspect of its agenda; to hijack the traditional political left and turn it fascist; to divide and rule; and to target agenda pushbackers. But there are other reasons which relate to what I am describing here. How many happy and joyful Wokers do you ever see especially at the extreme end? They are a mental and psychological mess consumed by emotional stress and constantly emotionally cocked for the next explosion of indignation at someone referring to a female as a female. They are walking, talking, batteries as Morpheus might say emitting frequencies which both enslave them in low-vibrational bubbles of perceptual limitation and feed the Archons. Add to this the hatred claimed to be love; fascism claimed to 'anti-fascism', racism claimed to be 'anti-racism';

exclusion claimed to inclusion; and the abuse-filled Internet trolling. You have a purpose-built Archontic energy system with not a wind turbine in sight and all founded on Archontic *inversion*. We have whole generations now manipulated to serve the Archons with their actions and energy. They will be doing so their entire adult lives unless they snap out of their Archon-induced trance. Is it really a surprise that Cult billionaires and corporations put so much money their way? Where is the energy of joy and laughter, including laughing at yourself which is confirmation of your own emotional security? Mark Twain said: 'The human race has one really effective weapon, and that is laughter.' We must use it all the time. Woke has destroyed comedy because it has no humour, no joy, sense of irony, or self-deprecation. Its energy is dense and intense. *Mmmmm*, lunch says the Archontic frequency. Rudolf Steiner (1861-1925) was the Austrian philosopher and famous esoteric thinker who established Waldorf education or Steiner schools to treat children like unique expressions of consciousness and not minds to be programmed with the perceptions determined by authority. I'd been writing about this energy vampiring for decades when I was sent in 2016 a quote by Steiner. He was spot on:

> There are beings in the spiritual realms for whom anxiety and fear emanating from human beings offer welcome food. When humans have no anxiety and fear, then these creatures starve. If fear and anxiety radiates from people and they break out in panic, then these creatures find welcome nutrition and they become more and more powerful. These beings are hostile towards humanity. Everything that feeds on negative feelings, on anxiety, fear and superstition, despair or doubt, are in reality hostile forces in super-sensible worlds, launching cruel attacks on human beings, while they are being fed ... These are exactly the feelings that belong to contemporary culture and materialism; because it estranges people from the spiritual world, it is especially suited to evoke hopelessness and fear of the unknown in people, thereby calling up the above mentioned hostile forces against them.

Pause for a moment from this perspective and reflect on what has happened in the world since the start of 2020. Not only will pennies drop, but billion dollar bills. We see the same theme from Don Juan Matus, a Yaqui Indian shaman in Mexico and the information source for Peruvian-born writer, Carlos Castaneda, who wrote a series of

books from the 1960s to 1990s. Don Juan described the force manipulating human society and his name for the Archons was the predator:

> We have a predator that came from the depths of the cosmos and took over the rule of our lives. Human beings are its prisoners. The predator is our lord and master. It has rendered us docile, helpless. If we want to protest, it suppresses our protest. If we want to act independently, it demands that we don't do so ... indeed we are held prisoner!
>
> They took us over because we are food to them, and they squeeze us mercilessly because we are their sustenance. Just as we rear chickens in coops, the predators rear us in human coops, humaneros. Therefore, their food is always available to them.
>
> Different cultures, different eras, same recurring theme.

The 'ennoia' dilemma

Nag Hammadi Gnostic manuscripts say that Archon consciousness has no 'ennoia'. This is directly translated as 'intentionality', but I'll use the term 'creative imagination'. The *All That Is* in awareness of itself is the source of all creativity – all possibility – and the more disconnected you are from that source the more you are subsequently denied 'creative imagination'. Given that Archon consciousness is almost entirely disconnected it severely lacks creativity and has to rely on far more mechanical processes of thought and exploit the creative potential of those that do have 'ennoia'. You can see cases of this throughout human society. Archon consciousness almost entirely dominates the global banking system and if we study how that system works you will appreciate what I mean. Banks manifest 'money' out of nothing by issuing lines of 'credit' which is 'money' that has never, does not, and will never exist except in theory. It's a confidence trick. If you think 'credit' figures-on-a-screen 'money' is worth anything you accept it as payment. If you don't then the whole system collapses through lack of confidence in the value of that 'money'. Archontic bankers with no 'ennoia' are 'lending' 'money' that doesn't exist to humans that *do* have creativity – those that have the inspired ideas and create businesses and products. Archon banking feeds off human creativity

which it controls through 'money' creation and debt. Humans have the creativity and Archons exploit that for their own benefit and control while having none themselves. Archon Internet platforms like Facebook claim joint copyright of everything that creative users post and while Archontic minds like Zuckerberg may officially head that company it will be human creatives on the staff that provide the creative inspiration. When you have limitless 'money' you can then buy other companies established by creative humans. Witness the acquisition record of Facebook, Google and their like. Survey the Archon-controlled music industry and you see non-creative dark suit executives making their fortune from the human creativity of their artists. The cases are endless. Research the history of people like Gates and Zuckerberg and how their empires were built on exploiting the creativity of others. Archon minds cannot create out of nothing, but they are skilled (because they have to be) in what Gnostic texts call 'countermimicry'. They can imitate, but not innovate. Sabbatians trawl the creativity of others through backdoors they install in computer systems through their cybersecurity systems. Archon-controlled China is globally infamous for stealing intellectual property and I remember how Hong Kong, now part of China, became notorious for making counterfeit copies of the creativity of others – 'countermimicry'. With the now pervasive and all-seeing surveillance systems able to infiltrate any computer you can appreciate the potential for Archons to vampire the creativity of humans. Author John Lamb Lash wrote in his book about the Nag Hammadi texts, *Not In His Image*:

> Although they cannot originate anything, because they lack the divine factor of ennoia (intentionality), Archons can imitate with a vengeance. Their expertise is simulation (HAL, virtual reality). The Demiurge [Yaldabaoth] fashions a heaven world copied from the fractal patterns [of the original] ... His construction is celestial kitsch, like the fake Italianate villa of a Mafia don complete with militant angels to guard every portal.

This brings us to something that I have been speaking about since the turn of the millennium. Our reality is a simulation; a virtual reality that we think is real. No, I'm not kidding.

Human reality? Well, virtually

I had pondered for years about whether our reality is 'real' or some kind of construct. I remembered being immensely affected on a visit as a small child in the late 1950s to the then newly-opened Planetarium on the Marylebone Road in London which is now closed and part of the adjacent Madame Tussauds wax museum. It was in the middle of the day, but when the lights went out there was the night sky projected in the Planetarium's domed ceiling and it appeared to be so real. The experience never left me and I didn't know why until around the turn of the millennium when I became certain that our 'night sky' and entire reality is a projection, a virtual reality, akin to the illusory world portrayed in the *Matrix* movies. I looked at the sky one day in this period and it appeared to me like the domed roof of the Planetarium. The release of the first *Matrix* movie in 1999 also provided a synchronistic and perfect visual representation of where my mind had been going for a long time. I hadn't come across the Gnostic Nag Hammadi texts then. When I did years later the correlation was once again astounding. As I read Gnostic accounts from 1,600 years and more earlier it was clear that they were describing the same simulation phenomenon. They tell how the Yaldabaoth 'Demiurge' and Archons created a 'bad copy' of original reality to rule over all that were captured by its illusions and the body was a prison to trap consciousness in the 'bad copy' fake reality. Read how Gnostics describe the 'bad copy' and update that to current times and they are referring to what we would call today a virtual reality simulation.

Author John Lamb Lash said 'the Demiurge fashions a heaven world copied from the fractal patterns' of the original through expertise in 'HAL' or virtual reality simulation. Fractal patterns are part of the energetic information construct of our reality, a sort of blueprint. If these patterns were copied in computer terms it would indeed give you a copy of a 'natural' reality in a non-natural frequency and digital form. The principle is the same as making a copy of a website. The original website still exists, but now you can change the copy version to make it whatever you like and it can

become very different to the original website. Archons have done this with our reality, a *synthetic* copy of prime reality that still exists beyond the frequency walls of the simulation. Trapped within the illusions of this synthetic Matrix, however, were and are human consciousness and other expressions of prime reality and this is why the Archons via the Cult are seeking to make the human body synthetic and give us synthetic AI minds to complete the job of turning the entire reality synthetic including what we perceive to be the natural world. To quote Kurzweil: 'Nanobots will infuse all the matter around us with information. Rocks, trees, everything will become these intelligent creatures.' Yes, *synthetic* 'creatures' just as 'Covid' and other genetically-manipulating 'vaccines' are designed to make the human body synthetic. From this perspective it is obvious why Archons and their Cult are so desperate to infuse synthetic material into every human with their 'Covid' scam.

Let there be (electromagnetic) light

Yaldabaoth, the force that created the simulation, or Matrix, makes sense of the Gnostic reference to 'The Great Architect' and its use by Cult Freemasonry as the name of its deity. The designer of the Matrix in the movies is called 'The Architect' and that trilogy is jam-packed with symbolism relating to these subjects. I have contended for years that the angry Old Testament God (Yaldabaoth) is the 'God' being symbolically 'quoted' in the opening of Genesis as 'creating the world'. This is not the creation of prime reality – it's the creation of the *simulation*. The Genesis 'God' says: 'Let there be Light: and there was light.' But what is this 'Light'? I have said for decades that the speed of light (186,000 miles per second) is not the fastest speed possible as claimed by mainstream science and is in fact the frequency walls or outer limits of the Matrix. You can't have a fastest or slowest anything within all possibility when everything is possible. The human body is encoded to operate within the speed of light or *within the simulation* and thus we see only the tiny frequency band of visible *light*. Near-death experiencers who perceive reality outside the body during temporary 'death' describe a very different

form of light and this is supported by the Nag Hammadi texts. Prime reality beyond the simulation ('Upper Aeons' to the Gnostics) is described as a realm of incredible beauty, bliss, love and harmony – a realm of 'watery light' that is so powerful 'there are no shadows'. Our false reality of Archon control, which Gnostics call the 'Lower Aeons', is depicted as a realm with a different kind of 'light' and described in terms of chaos, 'Hell', 'the Abyss' and 'Outer Darkness', where trapped souls are tormented and manipulated by demons (relate that to the 'Covid' hoax alone). The watery light theme can be found in near-death accounts and it is not the same as *simulation* 'light' which is electromagnetic or radiation light within the speed of light – the 'Lower Aeons'. Simulation 'light' is the 'luminous fire' associated by Gnostics with the Archons. The Bible refers to Yaldabaoth as 'that old serpent, called the Devil, and Satan, which deceiveth the whole world' (Revelation 12:9). I think that making a simulated copy of prime reality ('countermimicry') and changing it dramatically while all the time manipulating humanity to believe it to be real could probably meet the criteria of deceiving the whole world. Then we come to the Cult god Lucifer – the *Light Bringer*. Lucifer is symbolic of Yaldabaoth, the bringer of radiation light that forms the bad copy simulation within the speed of light. 'He' is symbolised by the lighted torch held by the Statue of Liberty and in the name 'Illuminati'. Sabbatian-Frankism declares that Lucifer is the true god and Lucifer is the real god of Freemasonry honoured as their 'Great or Grand Architect of the Universe' (simulation).

I would emphasise, too, the way Archontic technologically-generated luminous fire of radiation has deluged our environment since I was a kid in the 1950s and changed the nature of The Field with which we constantly interact. Through that interaction technological radiation is changing us. The Smart Grid is designed to operate with immense levels of communication power with 5G expanding across the world and 6G, 7G, in the process of development. Radiation is the simulation and the Archontic manipulation system. Why wouldn't the Archon Cult wish to unleash radiation upon us to an ever-greater extreme to form

Kurzweil's 'cloud'? The plan for a synthetic human is related to the need to cope with levels of radiation beyond even anything we've seen so far. Biological humans would not survive the scale of radiation they have in their script. The Smart Grid is a technological sub-reality within the technological simulation to further disconnect five-sense perception from expanded consciousness. It's a technological prison of the mind.

Infusing the 'spirit of darkness'

A recurring theme in religion and native cultures is the manipulation of human genetics by a non-human force and most famously recorded as the biblical 'sons of god' (the god*s* plural in the original) who interbred with the daughters of men. The Nag Hammadi *Apocryphon of John* tells the same story this way:

> He [Yaldabaoth] sent his angels [Archons/demons] to the daughters of men, that they might take some of them for themselves and raise offspring for their enjoyment. And at first they did not succeed. When they had no success, they gathered together again and they made a plan together ... And the angels changed themselves in their likeness into the likeness of their mates, filling them with the spirit of darkness, which they had mixed for them, and with evil ... And they took women and begot children out of the darkness according to the likeness of their spirit.

Possession when a discarnate entity takes over a human body is an age-old theme and continues today. It's very real and I've seen it. Satanic and secret society rituals can create an energetic environment in which entities can attach to initiates and I've heard many stories of how people have changed their personality after being initiated even into lower levels of the Freemasons. I have been inside three Freemasonic temples, one at a public open day and two by just walking in when there was no one around to stop me. They were in Ryde, the town where I live, Birmingham, England, when I was with a group, and Boston, Massachusetts. They all felt the same energetically – dark, dense, low-vibrational and sinister. Demonic attachment can happen while the initiate has no idea what is going on. To them it's just a ritual to get in the Masons and do a bit of good

business. In the far more extreme rituals of Satanism human possession is even more powerful and they are designed to make possession possible. The hierarchy of the Cult is dictated by the power and perceived status of the possessing Archon. In this way the Archon hierarchy becomes the Cult hierarchy. Once the entity has attached it can influence perception and behaviour and if it attaches to the extreme then so much of its energy (information) infuses into the body information field that the hologram starts to reflect the nature of the possessing entity. This is the *Exorcist* movie type of possession when facial features change and it's known as shapeshifting. Islam's Jinn are said to be invisible tricksters who change shape, 'whisper', confuse and take human form. These are all traits of the Archons and other versions of the same phenomenon. Extreme possession could certainty infuse the 'spirit of darkness' into a partner during sex as the Nag Hammadi texts appear to describe. Such an infusion can change genetics which is also energetic information. Human genetics is information and the 'spirit of darkness' is information. Mix one with the other and change must happen. Islam has the concept of a 'Jinn baby' through possession of the mother and by Jinn taking human form. There are many ways that human genetics can be changed and remember that Archons have been aware all along of advanced techniques to do this. What is being done in human society today – and far more – was known about by Archons at the time of the 'fallen ones' and their other versions described in religions and cultures.

Archons and their human-world Cult are obsessed with genetics as we see today and they know this dictates how information is processed into perceived reality during a human life. They needed to produce a human form that would decode the simulation and this is symbolically known as 'Adam and Eve' who left the 'garden' (prime reality) and 'fell' into Matrix reality. The simulation is not a 'physical' construct (there is no 'physical'); it is a source of information. Think Wi-Fi again. The simulation is an energetic field encoded with information and body-brain systems are designed to decode that information encoded in wave or frequency form which

is transmitted to the brain as electrical signals. These are decoded by the brain to construct our sense of reality – an illusory 'physical' world that only exists in the brain or the mind. Virtual reality games mimic this process using the same sensory decoding system. Information is fed to the senses to decode a virtual reality that can appear so real, but isn't (Figs 18 and 19). Some scientists believe – and I agree with them – that what we perceive as 'physical' reality only exists when we are looking or observing. The act of perception or focus triggers the decoding systems which turn waveform information into holographic reality. When we are not observing something our reality reverts from a holographic state to a waveform state. This relates to the same principle as a falling tree not making a noise unless someone is there to hear it or decode it. The concept makes sense from the simulation perspective. A computer is not decoding all the information in a Wi-Fi field all the time and only decodes or brings into reality on the screen that part of Wi-Fi that it's decoding – focusing upon – at that moment.

Figure 18: Virtual reality technology 'hacks' into the body's five-sense decoding system.

Figure 19: The result can be experienced as very 'real'.

Interestingly, Professor Donald Hoffman at the Department of Cognitive Sciences at the University of California, Irvine, says that our experienced reality is like a computer interface that shows us only the level with which we interact while hiding all that exists beyond it: 'Evolution shaped us with a user interface that hides the truth. Nothing that we see is the truth – the very language of space and time and objects is the wrong language to describe reality.' He is correct in what he says on so many levels. Space and time are not a universal reality. They are a phenomenon of decoded *simulation* reality as part of the process of enslaving our sense of reality. Near-death experiencers report again and again how space and time did not exist as we perceive them once they were free of the body – body decoding systems. You can appreciate from this why Archons and their Cult are so desperate to entrap human attention in the five senses where we are in the Matrix and of the Matrix. Opening your mind to expanded states of awareness takes you beyond the information confines of the simulation and you become aware of knowledge and insights denied to you before. This is what we call 'awakening' – *awakening from the Matrix* – and in the final chapter I will relate this to current events.

Where are the 'aliens'?

A simulation would explain the so-called 'Fermi Paradox' named after Italian physicist Enrico Fermi (1901-1954) who created the first nuclear reactor. He considered the question of why there is such a lack of extraterrestrial activity when there are so many stars and planets in an apparently vast universe; but what if the night sky that we see, or think we do, is a simulated projection as I say? If you control the simulation and your aim is to hold humanity fast in essential ignorance would you want other forms of life including advanced life coming and going sharing information with humanity? Or would you want them to believe they were isolated and apparently alone? Themes of human isolation and apartness are common whether they be the perception of a lifeless universe or the fascist isolation laws of the 'Covid' era. Paradoxically the very

existence of a simulation means that we are not alone when some force had to construct it. My view is that experiences that people have reported all over the world for centuries with Reptilians and Grey entities are Archon phenomena as Nag Hammadi texts describe; and that benevolent 'alien' interactions are non-human groups that come in and out of the simulation by overcoming Archon attempts to keep them out. It should be highlighted, too, that Reptilians and Greys are obsessed with *genetics* and *technology* as related by cultural accounts and those who say they have been abducted by them. Technology is their way of overcoming some of the limitations in their creative potential and our technology-driven and controlled human society of today is *arch*etypical Archon-Reptilian-Grey modus operandi. Technocracy is really *Archon*tocracy. The Universe does not have to be as big as it appears with a simulation. There is no space or distance only information decoded into holographic reality. What we call 'space' is only the absence of holographic 'objects' and that 'space' is The Field of energetic information which connects everything into a single whole. The same applies with the artificially-generated information field of the simulation. The Universe is not big or small as a physical reality. It is decoded information, that's all, and its perceived size is decided by the way the simulation is encoded to make it appear. The entire night sky as we perceive it only exists in our brain and so where are those 'millions of light years'? The 'stars' on the ceiling of the Planetarium looked a vast distance away.

There's another point to mention about 'aliens'. I have been highlighting since the 1990s the plan to stage a fake 'alien invasion' to justify the centralisation of global power and a world military. Nazi scientist Werner von Braun, who was taken to America by Operation Paperclip after World War Two to help found NASA, told his American assistant Dr Carol Rosin about the Cult agenda when he knew he was dying in 1977. Rosin said that he told her about a sequence that would lead to total human control by a one-world government. This included threats from terrorism, rogue nations, meteors and asteroids before finally an 'alien invasion'. All of these

things, von Braun said, would be bogus and what I would refer to as a No-Problem-Reaction-Solution. Keep this in mind when 'the aliens are coming' is the new mantra. The aliens are not coming – they are *already here* and they have infiltrated human society while looking human. French-Canadian investigative journalist Serge Monast said in 1994 that he had uncovered a NASA/military operation called Project Blue Beam which fits with what Werner von Braun predicted. Monast died of a 'heart attack' in 1996 the day after he was arrested and spent a night in prison. He was 51. He said Blue Beam was a plan to stage an alien invasion that would include religious figures beamed holographically into the sky as part of a global manipulation to usher in a 'new age' of worshipping what I would say is the Cult 'god' Yaldabaoth in a one-world religion. Fake holographic asteroids are also said to be part of the plan which again syncs with von Braun. How could you stage an illusory threat from asteroids unless they were holographic inserts? This is pretty straightforward given the advanced technology outside the public arena and the fact that our 'physical' reality is holographic anyway. Information fields would be projected and we would decode them into the illusion of a 'physical' asteroid. If they can sell a global 'pandemic' with a 'virus' that doesn't exist what will humans not believe if government and media tell them?

All this is particularly relevant as I write with the Pentagon planning to release in June, 2021, information about 'UFO sightings'. I have been following the UFO story since the early 1990s and the common theme throughout has been government and military denials and cover up. More recently, however, the Pentagon has suddenly become more talkative and apparently open with Air Force pilot radar images released of unexplained craft moving and changing direction at speeds well beyond anything believed possible with human technology. Then, in March, 2021, former Director of National Intelligence John Ratcliffe said a Pentagon report months later in June would reveal a great deal of information about UFO sightings unknown to the public. He said the report would have 'massive implications'. The order to do this was included bizarrely

in a $2.3 trillion 'coronavirus' relief and government funding bill passed by the Trump administration at the end of 2020. I would add some serious notes of caution here. I have been pointing out since the 1990s that the US military and intelligence networks have long had craft – 'flying saucers' or anti-gravity craft – which any observer would take to be extraterrestrial in origin. Keeping this knowledge from the public allows craft flown by *humans* to be perceived as alien visitations. I am not saying that 'aliens' do not exist. I would be the last one to say that, but we have to be streetwise here. President Ronald Reagan told the UN General Assembly in 1987: 'I occasionally think how quickly our differences worldwide would vanish if we were facing an alien threat from outside this world.' That's the idea. Unite against a common 'enemy' with a common purpose behind your 'saviour force' (the Cult) as this age-old technique of mass manipulation goes global.

Science moves this way …

I could find only one other person who was discussing the simulation hypothesis publicly when I concluded it was real. This was Nick Bostrom, a Swedish-born philosopher at the University of Oxford, who has explored for many years the possibility that human reality is a computer simulation although his version and mine are not the same. Today the simulation and holographic reality hypothesis have increasingly entered the scientific mainstream. Well, the more open-minded mainstream, that is. Here are a few of the ever-gathering examples. American nuclear physicist Silas Beane led a team of physicists at the University of Bonn in Germany pursuing the question of whether we live in a simulation. They concluded that we probably do and it was likely based on a lattice of cubes. They found that cosmic rays align with that specific pattern. The team highlighted the Greisen–Zatsepin–Kuzmin (GZK) limit which refers to cosmic ray particle interaction with cosmic background radiation that creates an apparent boundary for cosmic ray particles. They say in a paper entitled 'Constraints on the Universe as a Numerical Simulation' that this 'pattern of constraint' is exactly what you

would find with a computer simulation. They also made the point that a simulation would create its own 'laws of physics' that would limit possibility. I've been making the same point for decades that the *perceived* laws of physics relate only to this reality, or what I would later call the simulation. When designers write codes to create computer and virtual reality games they are the equivalent of the laws of physics for that game. Players interact within the limitations laid out by the coding. In the same way those who wrote the codes for the simulation decided the laws of physics that would apply. These can be overridden by expanded states of consciousness, but not by those enslaved in only five-sense awareness where simulation codes rule. Overriding the codes is what people call 'miracles'. They are not. They are bypassing the encoded limits of the simulation. A population caught in simulation perception would have no idea that this was their plight. As the Bonn paper said: 'Like a prisoner in a pitch-black cell we would not be able to see the "walls" of our prison,' That's true if people remain mesmerised by the five senses. Open to expanded awareness and those walls become very clear. The main one is the speed of light.

American theoretical physicist James Gates is another who has explored the simulation question and found considerable evidence to support the idea. Gates was Professor of Physics at the University of Maryland, Director of The Center for String and Particle Theory, and on Barack Obama's Council of Advisors on Science and Technology. He and his team found *computer codes* of digital data embedded in the fabric of our reality. They relate to on-off electrical charges of 1 and 0 in the binary system used by computers. 'We have no idea what they are doing there', Gates said. They found within the energetic fabric mathematical sequences known as error-correcting codes or block codes that 'reboot' data to its original state or 'default settings' when something knocks it out of sync. Gates was asked if he had found a set of equations embedded in our reality indistinguishable from those that drive search engines and browsers and he said: 'That is correct.' Rich Terrile, director of the Centre for Evolutionary Computation and Automated Design at NASA's Jet

Propulsion Laboratory, has said publicly that he believes the Universe is a digital hologram that must have been created by a form of intelligence. I agree with that in every way. Waveform information is delivered electrically by the senses to the brain which constructs a *digital* holographic reality that we call the 'world'. This digital level of reality can be read by the esoteric art of numerology. Digital holograms are at the cutting edge of holographics today. We have digital technology everywhere designed to access and manipulate our digital level of perceived reality. Synthetic mRNA in 'Covid vaccines' has a digital component to manipulate the body's digital 'operating system'.

Reality is numbers

How many know that our reality can be broken down to numbers and codes that are the same as computer games? Max Tegmark, a physicist at the Massachusetts Institute of Technology (MIT), is the author of *Our Mathematical Universe* in which he lays out how reality can be entirely described by numbers and maths in the way that a video game is encoded with the 'physics' of computer games. Our world and computer virtual reality are essentially the same. Tegmark imagines the perceptions of characters in an advanced computer game when the graphics are so good they don't know they are in a game. They think they can bump into real objects (electromagnetic resistance in our reality), fall in love and feel emotions like excitement. When they began to study the apparently 'physical world' of the video game they would realise that everything was made of pixels (which have been found in our energetic reality as must be the case when on one level our world is digital). What computer game characters thought was physical 'stuff', Tegmark said, could actually be broken down into numbers:

> And we're exactly in this situation in our world. We look around and it doesn't seem that mathematical at all, but everything we see is made out of elementary particles like quarks and electrons. And what properties does an electron have? Does it have a smell or a colour or a texture? No! ... We physicists have come up with geeky names for [Electron] properties, like

electric charge, or spin, or lepton number, but the electron doesn't care what we call it, the properties are just numbers.

This is the illusory reality Gnostics were describing. This is the simulation. The A, C, G, and T codes of DNA have a binary value – A and C = 0 while G and T = 1. This has to be when the simulation is digital and the body must be digital to interact with it. Recurring mathematical sequences are encoded throughout reality and the body. They include the Fibonacci sequence in which the two previous numbers are added to get the next one, as in ... 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, etc. The sequence is encoded in the human face and body, proportions of animals, DNA, seed heads, pine cones, trees, shells, spiral galaxies, hurricanes and the number of petals in a flower. The list goes on and on. There are fractal patterns – a 'never-ending pattern that is infinitely complex and self-similar across all scales in the as above, so below, principle of holograms. These and other famous recurring geometrical and mathematical sequences such as Phi, Pi, Golden Mean, Golden Ratio and Golden Section are *computer codes* of the simulation. I had to laugh and give my head a shake the day I finished this book and it went into the production stage. I was sent an article in *Scientific American* published in April, 2021, with the headline 'Confirmed! We Live in a Simulation'. Two decades after I first said our reality is a simulation and the speed of light is it's outer limit the article suggested that we do live in a simulation and that the speed of light is its outer limit. I left school at 15 and never passed a major exam in my life while the writer was up to his eyes in qualifications. As I will explain in the final chapter *knowing* is far better than thinking and they come from very different sources. The article rightly connected the speed of light to the processing speed of the 'Matrix' and said what has been in my books all this time … 'If we are in a simulation, as it appears, then space is an abstract property written in code. It is not real'. No it's not and if we live in a simulation something created it and it wasn't *us*. 'That David Icke says we are manipulated by aliens' – he's crackers.'

Wow …

The reality that humanity thinks is so real is an illusion. Politicians, governments, scientists, doctors, academics, law enforcement, media, school and university curriculums, on and on, are all founded on a world that *does not exist* except as a simulated prison cell. Is it such a stretch to accept that 'Covid' doesn't exist when our entire 'physical' reality doesn't exist? Revealed here is the knowledge kept under raps in the Cult networks of compartmentalised secrecy to control humanity's sense of reality by inducing the population to believe in a reality that's not real. If it wasn't so tragic in its experiential consequences the whole thing would be hysterically funny. None of this is new to Renegade Minds. Ancient Greek philosopher Plato (about 428 to about 347BC) was a major influence on Gnostic belief and he described the human plight thousands of years ago with his Allegory of the Cave. He told the symbolic story of prisoners living in a cave who had never been outside. They were chained and could only see one wall of the cave while behind them was a fire that they could not see. Figures walked past the fire casting shadows on the prisoners' wall and those moving shadows became their sense of reality. Some prisoners began to study the shadows and were considered experts on them (today's academics and scientists), but what they studied was only an illusion (today's academics and scientists). A prisoner escaped from the cave and saw reality as it really is. When he returned to report this revelation they didn't believe him, called him mad and threatened to kill him if he tried to set them free. Plato's tale is not only a brilliant analogy of the human plight and our illusory reality. It describes, too, the dynamics of the 'Covid' hoax. I have only skimmed the surface of these subjects here. The aim of this book is to crisply connect all essential dots to put what is happening today into its true context. All subject areas and their connections in this chapter are covered in great evidential detail in *Everything You Need To Know, But Have Never Been Told* and *The Answer*.

They say that bewildered people 'can't see the forest for the trees'. Humanity, however, can't see the forest for the *twigs*. The five senses

see only twigs while Renegade Minds can see the forest and it's the forest where the answers lie with the connections that reveals. Breaking free of perceptual programming so the forest can be seen is the way we turn all this around. Not breaking free is how humanity got into this mess. The situation may seem hopeless, but I promise you it's not. We are a perceptual heartbeat from paradise if only we knew.

CHAPTER TWELVE

Escaping Wetiko

Life is simply a vacation from the infinite
Dean Cavanagh

Renegade Minds weave the web of life and events and see common themes in the apparently random. They are always there if you look for them and their pursuit is aided by incredible synchronicity that comes when your mind is open rather than mesmerised by what it thinks it can see.

Infinite awareness is infinite possibility and the more of infinite possibility that we access the more becomes infinitely possible. That may be stating the apparently obvious, but it is a devastatingly-powerful fact that can set us free. We are a point of attention within an infinity of consciousness. The question is how much of that infinity do we choose to access? How much knowledge, insight, awareness, wisdom, do we want to connect with and explore? If your focus is only in the five senses you will be influenced by a fraction of infinite awareness. I mean a range so tiny that it gives new meaning to infinitesimal. Limitation of self-identity and a sense of the possible limit accordingly your range of consciousness. We are what we think we are. Life is what we think it is. The dream is the dreamer and the dreamer is the dream. Buddhist philosophy puts it this way: 'As a thing is viewed, so it appears.' Most humans live in the realm of touch, taste, see, hear, and smell and that's the limit of their sense of the possible and sense of self. Many will follow a religion and speak of a God in his heaven, but their lives are still

dominated by the five senses in their perceptions and actions. The five senses become the arbiter of everything. When that happens all except a smear of infinity is sealed away from influence by the rigid, unyielding, reality bubbles that are the five-sense human or Phantom Self. Archon Cult methodology is to isolate consciousness within five-sense reality – the simulation – and then program that consciousness with a sense of self and the world through a deluge of life-long information designed to instil the desired perception that allows global control. Efforts to do this have increased dramatically with identity politics as identity bubbles are squeezed into the minutiae of five-sense detail which disconnect people even more profoundly from the infinite 'I'.

Five-sense focus and self-identity are like a firewall that limits access to the infinite realms. You only perceive one radio or television station and no other. We'll take that literally for a moment. Imagine a vast array of stations giving different information and angles on reality, but you only ever listen to one. Here we have the human plight in which the population is overwhelmingly confined to CultFM. This relates only to the frequency range of CultFM and limits perception and insight to that band – limits *possibility* to that band. It means you are connecting with an almost imperceptibly minuscule range of possibility and creative potential within the infinite Field. It's a world where everything seems apart from everything else and where synchronicity is rare. Synchronicity is defined in the dictionary as 'the happening by chance of two or more related or similar events at the same time'. Use of 'by chance' betrays a complete misunderstanding of reality. Synchronicity is not 'by chance'. As people open their minds, or 'awaken' to use the term, they notice more and more coincidences in their lives, bits of 'luck', apparently miraculous happenings that put them in the right place at the right time with the right people. Days become peppered with 'fancy meeting you here' and 'what are the chances of that?' My entire life has been lived like this and ever more so since my own colossal awakening in 1990 and 91 which transformed my sense of reality. Synchronicity is not 'by chance'; it is by accessing expanded

realms of possibility which allow expanded potential for manifestation. People broadcasting the same vibe from the same openness of mind tend to be drawn 'by chance' to each other through what I call frequency magnetism and it's not only people. In the last more than 30 years incredible synchronicity has also led me through the Cult maze to information in so many forms and to crucial personal experiences. These 'coincidences' have allowed me to put the puzzle pieces together across an enormous array of subjects and situations. Those who have breached the bubble of five-sense reality will know exactly what I mean and this escape from the perceptual prison cell is open to everyone whenever they make that choice. This may appear super-human when compared with the limitations of 'human', but it's really our natural state. 'Human' as currently experienced is consciousness in an unnatural state of induced separation from the infinity of the whole. I'll come to how this transformation into unity can be made when I have described in more detail the force that holds humanity in servitude by denying this access to infinite self.

The Wetiko factor

I have been talking and writing for decades about the way five-sense mind is systematically barricaded from expanded awareness. I have used the analogy of a computer (five-sense mind) and someone at the keyboard (expanded awareness). Interaction between the computer and the operator is symbolic of the interaction between five-sense mind and expanded awareness. The computer directly experiences the Internet and the operator experiences the Internet via the computer which is how it's supposed to be – the two working as one. Archons seek to control that point where the operator connects with the computer to stop that interaction (Fig 20). Now the operator is banging the keyboard and clicking the mouse, but the computer is not responding and this happens when the computer is taken over – *possessed* – by an appropriately-named computer 'virus'. The operator has lost all influence over the computer which goes its own way making decisions under the control of the 'virus'. I have

just described the dynamic through which the force known to Gnostics as Yaldabaoth and Archons disconnects five-sense mind from expanded awareness to imprison humanity in perceptual servitude.

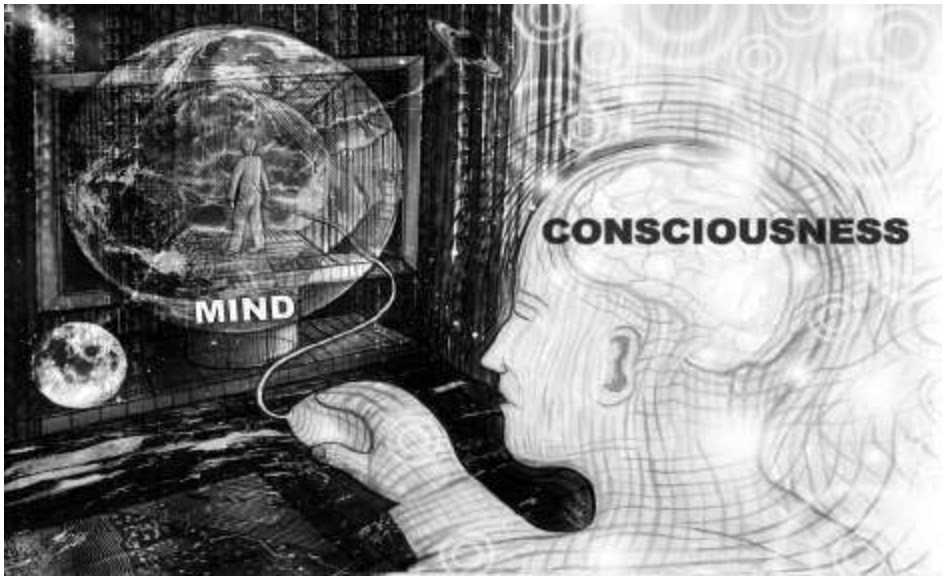

Figure 20: The mind 'virus' I have been writing about for decades seeks to isolate five-sense mind (the computer) from the true 'I'. (Image by Neil Hague).

About a year ago I came across a Native American concept of Wetiko which describes precisely the same phenomenon. Wetiko is the spelling used by the Cree and there are other versions including wintiko and windigo used by other tribal groups. They spell the name with lower case, but I see Wetiko as a proper noun as with Archons and prefer a capital. I first saw an article about Wetiko by writer and researcher Paul Levy which so synced with what I had been writing about the computer/operator disconnection and later the Archons. I then read his book, the fascinating *Dispelling Wetiko, Breaking the Spell of Evil*. The parallels between what I had concluded long before and the Native American concept of Wetiko were so clear and obvious that it was almost funny. For Wetiko see the Gnostic Archons for sure and the Jinn, the Predators, and every other name for a force of evil, inversion and chaos. Wetiko is the Native American name for the force that divides the computer from

the operator (Fig 21). Indigenous author Jack D. Forbes, a founder of the Native American movement in the 1960s, wrote another book about Wetiko entitled *Columbus And Other Cannibals – The Wetiko Disease of Exploitation, Imperialism, and Terrorism* which I also read. Forbes says that Wetiko refers to an evil person or spirit 'who terrorizes other creatures by means of terrible acts, including cannibalism'. Zulu shaman Credo Mutwa told me that African accounts tell how cannibalism was brought into the world by the Chitauri 'gods' – another manifestation of Wetiko. The distinction between 'evil person or spirit' relates to Archons/Wetiko possessing a human or acting as pure consciousness. Wetiko is said to be a sickness of the soul or spirit and a state of being that takes but gives nothing back – the Cult and its operatives perfectly described. Black Hawk, a Native American war leader defending their lands from confiscation, said European invaders had 'poisoned hearts' – Wetiko hearts – and that this would spread to native societies. Mention of the heart is very significant as we shall shortly see. Forbes writes: 'Tragically, the history of the world for the past 2,000 years is, in great part, the story of the epidemiology of the wetiko disease.' Yes, and much longer. Forbes is correct when he says: 'The wetikos destroyed Egypt and Babylon and Athens and Rome and Tenochtitlan [capital of the Aztec empire] and perhaps now they will destroy the entire earth.' Evil, he said, is the number one export of a Wetiko culture – see its globalisation with 'Covid'. Constant war, mass murder, suffering of all kinds, child abuse, Satanism, torture and human sacrifice are all expressions of Wetiko and the Wetiko possessed. The world is Wetiko made manifest, *but it doesn't have to be*. There is a way out of this even now.

Figure 21: The mind 'virus' is known to Native Americans as 'Wetiko'. (Image by Neil Hague).

Cult of Wetiko

Wetiko is the Yaldabaoth frequency distortion that seeks to attach to human consciousness and absorb it into its own. Once this connection is made Wetiko can drive the perceptions of the target which they believe to be coming from their own mind. All the horrors of history and today from mass killers to Satanists, paedophiles like Jeffrey Epstein and other psychopaths, are the embodiment of Wetiko and express its state of being in all its grotesqueness. The Cult is Wetiko incarnate, Yaldabaoth incarnate, and it seeks to facilitate Wetiko assimilation of humanity in totality into its distortion by manipulating the population into low frequency states that match its own. Paul Levy writes: 'Holographically enforced within the psyche of every human being the wetiko virus pervades and underlies the entire field of consciousness, and can therefore potentially manifest through any one of us at any moment if we are not mindful.' The 'Covid' hoax has achieved this with many people, but others have not fallen into Wetiko's frequency lair. Players in the 'Covid' human catastrophe including Gates, Schwab, Tedros, Fauci, Whitty, Vallance, Johnson, Hancock, Ferguson, Drosten, and all the rest, including the psychopath psychologists, are expressions of Wetiko. This is why

they have no compassion or empathy and no emotional consequence for what they do that would make them stop doing it. Observe all the people who support the psychopaths in authority against the Pushbackers despite the damaging impact the psychopaths have on their own lives and their family's lives. You are again looking at Wetiko possession which prevents them seeing through the lies to the obvious scam going on. *Why can't they see it?* Wetiko won't let them see it. The perceptual divide that has now become a chasm is between the Wetikoed and the non-Wetikoed.

Paul Levy describes Wetiko in the same way that I have long described the Archontic force. They are the same distorted consciousness operating across dimensions of reality: '… the subtle body of wetiko is not located in the third dimension of space and time, literally existing in another dimension … it is able to affect ordinary lives by mysteriously interpenetrating into our three-dimensional world.' Wetiko does this through its incarnate representatives in the Cult and by weaving itself into The Field which on our level of reality is the electromagnetic information field of the simulation or Matrix. More than that, the simulation *is* Wetiko / Yaldabaoth. Caleb Scharf, Director of Astrobiology at Columbia University, has speculated that 'alien life' could be so advanced that it has transcribed itself into the quantum realm to become what we call physics. He said intelligence indistinguishable from the fabric of the Universe would solve many of its greatest mysteries:

> Perhaps hyper-advanced life isn't just external. Perhaps it's already all around. It is embedded in what we perceive to be physics itself, from the root behaviour of particles and fields to the phenomena of complexity and emergence ... In other words, life might not just be in the equations. It might BE the equations [My emphasis].

Scharf said it is possible that 'we don't recognise advanced life because it forms an integral and unsuspicious part of what we've considered to be the natural world'. I agree. Wetiko/Yaldabaoth *is* the simulation. We are literally in the body of the beast. But that doesn't mean it has to control us. We all have the power to overcome Wetiko

influence and the Cult knows that. I doubt it sleeps too well because it knows that.

Which Field?

This, I suggest, is how it all works. There are two Fields. One is the fierce electromagnetic light of the Matrix within the speed of light; the other is the 'watery light' of The Field beyond the walls of the Matrix that connects with the Great Infinity. Five-sense mind and the decoding systems of the body attach us to the Field of Matrix light. They have to or we could not experience this reality. Five-sense mind sees only the Matrix Field of information while our expanded consciousness is part of the Infinity Field. When we open our minds, and most importantly our hearts, to the Infinity Field we have a mission control which gives us an expanded perspective, a road map, to understand the nature of the five-sense world. If we are isolated only in five-sense mind there is no mission control. We're on our own trying to understand a world that's constantly feeding us information to ensure we do not understand. People in this state can feel 'lost' and bewildered with no direction or radar. You can see ever more clearly those who are influenced by the Fields of Big Infinity or little five-sense mind simply by their views and behaviour with regard to the 'Covid' hoax. We have had this division throughout known human history with the mass of the people on one side and individuals who could see and intuit beyond the walls of the simulation – Plato's prisoner who broke out of the cave and saw reality for what it is. Such people have always been targeted by Wetiko/Archon-possessed authority, burned at the stake or demonised as mad, bad and dangerous. The Cult today and its global network of 'anti-hate', 'anti-fascist' Woke groups are all expressions of Wetiko attacking those exposing the conspiracy, 'Covid' lies and the 'vaccine' agenda.

Woke as a whole is Wetiko which explains its black and white mentality and how at one it is with the Wetiko-possessed Cult. Paul Levy said: 'To be in this paradigm is to still be under the thrall of a two-valued logic – where things are either true or false – of a

wetikoized mind.' Wetiko consciousness is in a permanent rage, therefore so is Woke, and then there is Woke inversion and contradiction. 'Anti-fascists' act like fascists because fascists *and* 'anti-fascists' are both Wetiko at work. Political parties act the same while claiming to be different for the same reason. Secret society and satanic rituals are attaching initiates to Wetiko and the cold, ruthless, psychopathic mentality that secures the positions of power all over the world is Wetiko. Reframing 'training programmes' have the same cumulative effect of attaching Wetiko and we have their graduates described as automatons and robots with a cold, psychopathic, uncaring demeanour. They are all traits of Wetiko possession and look how many times they have been described in this book and elsewhere with regard to personnel behind 'Covid' including the police and medical profession. Climbing the greasy pole in any profession in a Wetiko society requires traits of Wetiko to get there and that is particularly true of politics which is not about fair competition and pre-eminence of ideas. It is founded on how many backs you can stab and arses you can lick. This culminated in the global 'Covid' coordination between the Wetiko possessed who pulled it off in all the different countries without a trace of empathy and compassion for their impact on humans. Our sight sense can see only holographic form and not the Field which connects holographic form. Therefore we perceive 'physical' objects with 'space' in between. In fact that 'space' is energy/consciousness operating on multiple frequencies. One of them is Wetiko and that connects the Cult psychopaths, those who submit to the psychopaths, and those who serve the psychopaths in the media operations of the world. Wetiko is Gates. Wetiko is the mask-wearing submissive. Wetiko is the fake journalist and 'fact-checker'. The Wetiko Field is coordinating the whole thing. Psychopaths, gofers, media operatives, 'anti-hate' hate groups, 'fact-checkers' and submissive people work as one unit *even without human coordination* because they are attached to the *same* Field which is organising it all (Fig 22). Paul Levy is here describing how Wetiko-possessed people are drawn together and refuse to let any information breach their rigid

perceptions. He was writing long before 'Covid', but I think you will recognise followers of the 'Covid' religion *oh just a little bit*:

People who are channelling the vibratory frequency of wetiko align with each other through psychic resonance to reinforce their unspoken shared agreement so as to uphold their deranged view of reality. Once an unconscious content takes possession of certain individuals, it irresistibly draws them together by mutual attraction and knits them into groups tied together by their shared madness that can easily swell into an avalanche of insanity.

A psychic epidemic is a closed system, which is to say that it is insular and not open to any new information or informing influences from the outside world which contradict its fixed, limited, and limiting perspective.

There we have the Woke mind and the 'Covid' mind. Compatible resonance draws the awakening together, too, which is clearly happening today.

Figure 22: The Wetiko Field from which the Cult pyramid and its personnel are made manifest. (Image by Neil Hague).

Spiritual servitude

Wetiko doesn't care about humans. It's not human; it just possesses humans for its own ends and the effect (depending on the scale of

possession) can be anything from extreme psychopathy to unquestioning obedience. Wetiko's worst nightmare is for human consciousness to expand beyond the simulation. Everything is focussed on stopping that happening through control of information, thus perception, thus frequency. The 'education system', media, science, medicine, academia, are all geared to maintaining humanity in five-sense servitude as is the constant stimulation of low-vibrational mental and emotional states (see 'Covid'). Wetiko seeks to dominate those subconscious spaces between five-sense perception and expanded consciousness where the computer meets the operator. From these subconscious hiding places Wetiko speaks to us to trigger urges and desires that we take to be our own and manipulate us into anything from low-vibrational to psychopathic states. Remember how Islam describes the Jinn as invisible tricksters that 'whisper' and confuse. Wetiko is the origin of the 'trickster god' theme that you find in cultures all over the world. Jinn, like the Archons, are Wetiko which is terrified of humans awakening and reconnecting with our true self for then its energy source has gone. With that the feedback loop breaks between Wetiko and human perception that provides the energetic momentum on which its very existence depends as a force of evil. Humans are both its target and its source of survival, but only if we are operating in low-vibrational states of fear, hate, depression and the background anxiety that most people suffer. We are Wetiko's target because we are its key to survival. It needs us, not the other way round. Paul Levy writes:

A vampire has no intrinsic, independent, substantial existence in its own right; it only exists in relation to us. The pathogenic, vampiric mind-parasite called wetiko is nothing in itself – not being able to exist from its own side – yet it has a 'virtual reality' such that it can potentially destroy our species …

…The fact that a vampire is not reflected by a mirror can also mean that what we need to see is that there's nothing, no-thing to see, other than ourselves. The fact that wetiko is the expression of something inside of us means that the cure for wetiko is with us as well. The critical issue is finding this cure within us and then putting it into effect.

Evil begets evil because if evil does not constantly expand and find new sources of energetic sustenance its evil, its *distortion*, dies with the assimilation into balance and harmony. Love is the garlic to Wetiko's vampire. Evil, the absence of love, cannot exist in the presence of love. I think I see a way out of here. I have emphasised so many times over the decades that the Archons/Wetiko and their Cult are not all powerful. *They are not*. I don't care how it looks even now *they are not*. I have not called them little boys in short trousers for effect. I have said it because it is true. Wetiko's insatiable desire for power over others is not a sign of its omnipotence, but its insecurity. Paul Levy writes: 'Due to the primal fear which ultimately drives it and which it is driven to cultivate, wetiko's body politic has an intrinsic and insistent need for centralising power and control so as to create imagined safety for itself.' *Yeeeeeees!* Exactly! Why does Wetiko want humans in an ongoing state of fear? Wetiko itself *is* fear and it is petrified of love. As evil is an absence of love, so love is an absence of fear. Love conquers all and *especially* Wetiko which *is* fear. Wetiko brought fear into the world when it wasn't here before. *Fear* was the 'fall', the fall into low-frequency ignorance and illusion – fear is **F**alse **E**motion **A**ppearing **R**eal. The simulation is driven and energised by fear because Wetiko/Yaldabaoth (fear) *are* the simulation. Fear is the absence of love and Wetiko is the absence of love.

Wetiko today

We can now view current events from this level of perspective. The 'Covid' hoax has generated momentous amounts of ongoing fear, anxiety, depression and despair which have empowered Wetiko. No wonder people like Gates have been the instigators when they are Wetiko incarnate and exhibit every trait of Wetiko in the extreme. See how cold and unemotional these people are like Gates and his cronies, how dead of eye they are. That's Wetiko. Sabbatians are Wetiko and everything they control including the World Health Organization, Big Pharma and the 'vaccine' makers, national 'health'

hierarchies, corporate media, Silicon Valley, the banking system, and the United Nations with its planned transformation into world government. All are controlled and possessed by the Wetiko distortion into distorting human society in its image. We are with this knowledge at the gateway to understanding the world. Divisions of race, culture, creed and sexuality are diversions to hide the real division between those possessed and influenced by Wetiko and those that are not. The 'Covid' hoax has brought both clearly into view. Human behaviour is not about race. Tyrants and dictatorships come in all colours and creeds. What unites the US president bombing the innocent and an African tribe committing genocide against another as in Rwanda? What unites them? *Wetiko*. All wars are Wetiko, all genocide is Wetiko, all hunger over centuries in a world of plenty is Wetiko. Children going to bed hungry, including in the West, is Wetiko. Cult-generated Woke racial divisions that focus on the body are designed to obscure the reality that divisions in behaviour are manifestations of mind, not body. Obsession with body identity and group judgement is a means to divert attention from the real source of behaviour – mind and perception. Conflict sown by the Woke both within themselves and with their target groups are Wetiko providing lunch for itself through still more agents of the division, chaos, and fear on which it feeds. The Cult is seeking to assimilate the entirety of humanity and all children and young people into the Wetiko frequency by manipulating them into states of fear and despair. Witness all the suicide and psychological unravelling since the spring of 2020. Wetiko psychopaths want to impose a state of unquestioning obedience to authority which is no more than a conduit for Wetiko to enforce its will and assimilate humanity into itself. It needs us to believe that resistance is futile when it fears resistance and even more so the game-changing non-cooperation with its impositions. It can use violent resistance for its benefit. Violent impositions and violent resistance are *both* Wetiko. The Power of Love with its Power of No will sweep Wetiko from our world. Wetiko and its Cult know that. They just don't want us to know.

AI Wetiko

This brings me to AI or artificial intelligence and something else Wetikos don't want us to know. What is AI *really*? I know about computer code algorithms and AI that learns from data input. These, however, are more diversions, the expeditionary force, for the real AI that they want to connect to the human brain as promoted by Silicon Valley Wetikos like Kurzweil. What is this AI? It is the frequency of *Wetiko*, the frequency of the Archons. The connection of AI to the human brain is the connection of the Wetiko frequency to create a Wetiko hive mind and complete the job of assimilation. The hive mind is planned to be controlled from Israel and China which are both 100 percent owned by Wetiko Sabbatians. The assimilation process has been going on minute by minute in the 'smart' era which fused with the 'Covid' era. We are told that social media is scrambling the minds of the young and changing their personality. This is true, but what is social media? Look more deeply at how it works, how it creates divisions and conflict, the hostility and cruelty, the targeting of people until they are destroyed. That's Wetiko. Social media is manipulated to tune people to the Wetiko frequency with all the emotional exploitation tricks employed by platforms like Facebook and its Wetiko front man, Zuckerberg. Facebook's Instagram announced a new platform for children to overcome a legal bar on them using the main site. This is more Wetiko exploitation and manipulation of kids. Amnesty International likened the plan to foxes offering to guard the henhouse and said it was incompatible with human rights. Since when did Wetiko or Zuckerberg (I repeat myself) care about that? Would Brin and Page at Google, Wojcicki at YouTube, Bezos at Amazon and whoever the hell runs Twitter act as they do if they were not channelling Wetiko? Would those who are developing technologies for no other reason than human control? How about those designing and selling technologies to kill people and Big Pharma drug and 'vaccine' producers who know they will end or devastate lives? Quite a thought for these people to consider is that if you are Wetiko in a human life you are Wetiko on the 'other side' unless your frequency

changes and that can only change by a change of perception which becomes a change of behaviour. Where Gates is going does not bear thinking about although perhaps that's exactly where he wants to go. Either way, that's where he's going. His frequency will make it so.

The frequency lair

I have been saying for a long time that a big part of the addiction to smartphones and devices is that a frequency is coming off them that entraps the mind. People spend ages on their phones and sometimes even a minute or so after they put them down they pick them up again and it all repeats. 'Covid' lockdowns will have increased this addiction a million times for obvious reasons. Addictions to alcohol overindulgence and drugs are another way that Wetiko entraps consciousness to attach to its own. Both are symptoms of low-vibrational psychological distress which alcoholism and drug addiction further compound. Do we think it's really a coincidence that access to them is made so easy while potions that can take people into realms beyond the simulation are banned and illegal? I have explored smartphone addiction in other books, the scale is mind-blowing, and that level of addiction does not come without help. Tech companies that make these phones are Wetiko and they will have no qualms about destroying the minds of children. We are seeing again with these companies the Wetiko perceptual combination of psychopathic enforcers and weak and meek unquestioning compliance by the rank and file.

The global Smart Grid is the Wetiko Grid and it is crucial to complete the Cult endgame. The simulation is radiation and we are being deluged with technological radiation on a devastating scale. Wetiko frauds like Elon Musk serve Cult interests while occasionally criticising them to maintain his street-cred. 5G and other forms of Wi-Fi are being directed at the earth from space on a volume and scale that goes on increasing by the day. Elon Musk's (officially) SpaceX Starlink project is in the process of putting tens of thousands of satellites in low orbit to cover every inch of the planet with 5G and other Wi-Fi to create Kurzweil's global 'cloud' to which the

human mind is planned to be attached very soon. SpaceX has approval to operate 12,000 satellites with more than 1,300 launched at the time of writing and applications filed for *30,000* more. Other operators in the Wi-Fi, 5G, low-orbit satellite market include OneWeb (UK), Telesat (Canada), and AST & Science (US). Musk tells us that AI could be the end of humanity and then launches a company called Neuralink to connect the human brain to computers. Musk's (in theory) Tesla company is building electric cars and the driverless vehicles of the smart control grid. As frauds and bullshitters go Elon Musk in my opinion is Major League.

5G and technological radiation in general are destructive to human health, genetics and psychology and increasing the strength of artificial radiation underpins the five-sense perceptual bubbles which are themselves expressions of radiation or electromagnetism. Freedom activist John Whitehead was so right with his 'databit by databit, we are building our own electronic concentration camps'. The Smart Grid and 5G is a means to control the human mind and infuse perceptual information into The Field to influence anyone in sync with its frequency. You can change perception and behaviour en masse if you can manipulate the population into those levels of frequency and this is happening all around us today. The arrogance of Musk and his fellow Cult operatives knows no bounds in the way that we see with Gates. Musk's satellites are so many in number already they are changing the night sky when viewed from Earth. The astronomy community has complained about this and they have seen nothing yet. Some consequences of Musk's Wetiko hubris include: Radiation; visible pollution of the night sky; interference with astronomy and meteorology; ground and water pollution from intensive use of increasingly many spaceports; accumulating space debris; continual deorbiting and burning up of aging satellites, polluting the atmosphere with toxic dust and smoke; and ever-increasing likelihood of collisions. A collective public open letter of complaint to Musk said:

> We are writing to you … because SpaceX is in process of surrounding the Earth with a network of thousands of satellites whose very purpose is to irradiate every square inch of the

Earth. SpaceX, like everyone else, is treating the radiation as if it were not there. As if the mitochondria in our cells do not depend on electrons moving undisturbed from the food we digest to the oxygen we breathe.

As if our nervous systems and our hearts are not subject to radio frequency interference like any piece of electronic equipment. As if the cancer, diabetes, and heart disease that now afflict a majority of the Earth's population are not metabolic diseases that result from interference with our cellular machinery. As if insects everywhere, and the birds and animals that eat them, are not starving to death as a result.

People like Musk and Gates believe in their limitless Wetiko arrogance that they can do whatever they like to the world because they own it. Consequences for humanity are irrelevant. It's absolutely time that we stopped taking this shit from these self-styled masters of the Earth when you consider where this is going.

Why is the Cult so anti-human?

I hear this question often: Why would they do this when it will affect them, too? Ah, but will it? Who is this *them*? Forget their bodies. They are just vehicles for Wetiko consciousness. When you break it all down to the foundations we are looking at a state of severely distorted consciousness targeting another state of consciousness for assimilation. The rest is detail. The simulation is the fly-trap in which unique sensations of the five senses create a cycle of addiction called reincarnation. Renegade Minds see that everything which happens in our reality is a smaller version of the whole picture in line with the holographic principle. Addiction to the radiation of smart technology is a smaller version of addiction to the whole simulation. Connecting the body/brain to AI is taking that addiction on a giant step further to total ongoing control by assimilating human incarnate consciousness into Wetiko. I have watched during the 'Covid' hoax how many are becoming ever more profoundly attached to Wetiko's perceptual calling cards of aggressive response to any other point of view ('There is no other god but me'), psychopathic lack of compassion and empathy, and servile submission to the narrative and will of authority. Wetiko is the psychopaths *and* subservience to psychopaths. The Cult of Wetiko is

so anti-human because it is *not* human. It embarked on a mission to destroy human by targeting everything that it means to be human and to survive as human. 'Covid' is not the end, just a means to an end. The Cult with its Wetiko consciousness is seeking to change Earth systems, including the atmosphere, to suit them, not humans. The gathering bombardment of 5G alone from ground and space is dramatically changing The Field with which the five senses interact. There is so much more to come if we sit on our hands and hope it will all go away. It is not meant to go away. It is meant to get ever more extreme and we need to face that while we still can – just.

Carbon dioxide is the gas of life. Without that human is over. Kaput, gone, history. No natural world, no human. The Cult has created a cock and bull story about carbon dioxide and climate change to justify its reduction to the point where Gates and the ignoramus Biden 'climate chief' John Kerry want to suck it out of the atmosphere. Kerry wants to do this because his master Gates does. Wetikos have made the gas of life a demon with the usual support from the Wokers of Extinction Rebellion and similar organisations and the bewildered puppet-child that is Greta Thunberg who was put on the world stage by Klaus Schwab and the World Economic Forum. The name Extinction Rebellion is both ironic and as always Wetiko inversion. The gas that we need to survive must be reduced to save us from extinction. The most basic need of human is oxygen and we now have billions walking around in face nappies depriving body and brain of this essential requirement of human existence. More than that 5G at 60 gigahertz interacts with the oxygen molecule to reduce the amount of oxygen the body can absorb into the bloodstream. The obvious knock-on consequences of that for respiratory and cognitive problems and life itself need no further explanation. Psychopaths like Musk are assembling a global system of satellites to deluge the human atmosphere with this insanity. The man should be in jail. Here we have two most basic of human needs, oxygen and carbon dioxide, being dismantled.

Two others, water and food, are getting similar treatment with the United Nations Agendas 21 and 2030 – the Great Reset – planning to

centrally control all water and food supplies. People will not even own rain water that falls on their land. Food is affected at the most basic level by reducing carbon dioxide. We have genetic modification or GMO infiltrating the food chain on a mass scale, pesticides and herbicides polluting the air and destroying the soil. Freshwater fish that provide livelihoods for 60 million people and feed hundreds of millions worldwide are being 'pushed to the brink' according the conservationists while climate change is the only focus. Now we have Gates and Schwab wanting to dispense with current food sources all together and replace them with a synthetic version which the Wetiko Cult would control in terms of production and who eats and who doesn't. We have been on the Totalitarian Tiptoe to this for more than 60 years as food has become ever more processed and full of chemical shite to the point today when it's not natural food at all. As Dr Tom Cowan says: 'If it has a label don't eat it.' Bill Gates is now the biggest owner of farmland in the United States and he does nothing without an ulterior motive involving the Cult. Klaus Schwab wrote: 'To feed the world in the next 50 years we will need to produce as much food as was produced in the last 10,000 years … food security will only be achieved, however, if regulations on genetically modified foods are adapted to reflect the reality that gene editing offers a precise, efficient and safe method of improving crops.' Liar. People and the world are being targeted with aluminium through vaccines, chemtrails, food, drink cans, and endless other sources when aluminium has been linked to many health issues including dementia which is increasing year after year. Insects, bees and wildlife essential to the food chain are being deleted by pesticides, herbicides and radiation which 5G is dramatically increasing with 6G and 7G to come. The pollinating bee population is being devastated while wildlife including birds, dolphins and whales are having their natural radar blocked by the effects of ever-increasing radiation. In the summer windscreens used to be splattered with insects so numerous were they. It doesn't happen now. Where have they gone?

Synthetic everything

The Cult is introducing genetically-modified versions of trees, plants and insects including a Gates-funded project to unleash hundreds of millions of genetically-modified, lab-altered and patented male mosquitoes to mate with wild mosquitoes and induce genetic flaws that cause them to die out. Clinically-insane Gates-funded Japanese researchers have developed mosquitos that spread vaccine and are dubbed 'flying vaccinators'. Gates is funding the modification of weather patterns in part to sell the myth that this is caused by carbon dioxide and he's funding geoengineering of the skies to change the atmosphere. Some of this came to light with the Gates-backed plan to release tonnes of chalk into the atmosphere to 'deflect the Sun and cool the planet'. Funny how they do this while the heating effect of the Sun is not factored into climate projections focussed on carbon dioxide. The reason is that they want to reduce carbon dioxide (so don't mention the Sun), but at the same time they do want to reduce the impact of the Sun which is so essential to human life and health. I have mentioned the sun-cholesterol-vitamin D connection as they demonise the Sun with warnings about skin cancer (caused by the chemicals in sun cream they tell you to splash on). They come from the other end of the process with statin drugs to reduce cholesterol that turns sunlight into vitamin D. A lack of vitamin D leads to a long list of health effects and how vitamin D levels must have fallen with people confined to their homes over 'Covid'. Gates is funding other forms of geoengineering and most importantly chemtrails which are dropping heavy metals, aluminium and self-replicating nanotechnology onto the Earth which is killing the natural world. See *Everything You Need To Know, But Have Never Been Told* for the detailed background to this.

Every human system is being targeted for deletion by a force that's not human. The Wetiko Cult has embarked on the process of transforming the human body from biological to synthetic biological as I have explained. Biological is being replaced by the artificial and synthetic – Archontic 'countermimicry' – right across human society. The plan eventually is to dispense with the human body altogether

and absorb human consciousness – which it wouldn't really be by then – into cyberspace (the simulation which is Wetiko/Yaldabaoth). Preparations for that are already happening if people would care to look. The alternative media rightly warns about globalism and 'the globalists', but this is far bigger than that and represents the end of the human race as we know it. The 'bad copy' of prime reality that Gnostics describe was a bad copy of harmony, wonder and beauty to start with before Wetiko/Yaldabaoth set out to change the simulated 'copy' into something very different. The process was slow to start with. Entrapped humans in the simulation timeline were not technologically aware and they had to be brought up to intellectual speed while being suppressed spiritually to the point where they could build their own prison while having no idea they were doing so. We have now reached that stage where technological intellect has the potential to destroy us and that's why events are moving so fast. Central American shaman Don Juan Matus said:

> Think for a moment, and tell me how you would explain the contradictions between the intelligence of man the engineer and the stupidity of his systems of belief, or the stupidity of his contradictory behaviour. Sorcerers believe that the predators have given us our systems of beliefs, our ideas of good and evil; our social mores. They are the ones who set up our dreams of success or failure. They have given us covetousness, greed, and cowardice. It is the predator who makes us complacent, routinary, and egomaniacal.
>
> In order to keep us obedient and meek and weak, the predators engaged themselves in a stupendous manoeuvre – stupendous, of course, from the point of view of a fighting strategist; a horrendous manoeuvre from the point of those who suffer it. They gave us their mind. The predators' mind is baroque, contradictory, morose, filled with the fear of being discovered any minute now.

For 'predators' see Wetiko, Archons, Yaldabaoth, Jinn, and all the other versions of the same phenomenon in cultures and religions all over the world. The theme is always the same because it's true and it's real. We have reached the point where we have to deal with it. The question is – how?

Don't fight – walk away

I thought I'd use a controversial subheading to get things moving in terms of our response to global fascism. What do you mean 'don't fight'? What do you mean 'walk away'? We've got to fight. We can't walk away. Well, it depends what we mean by fight and walk away. If fighting means physical combat we are playing Wetiko's game and falling for its trap. It wants us to get angry, aggressive, and direct hate and hostility at the enemy we think we must fight. Every war, every battle, every conflict, has been fought with Wetiko leading both sides. It's what it does. Wetiko wants a fight, anywhere, any place. Just hit me, son, so I can hit you back. Wetiko hits Wetiko and Wetiko hits Wetiko in return. I am very forthright as you can see in exposing Wetikos of the Cult, but I don't hate them. I refuse to hate them. It's what they want. What you hate you become. What you *fight* you become. Wokers, 'anti-haters' and 'anti-fascists' prove this every time they reach for their keyboards or don their balaclavas. By walk away I mean to disengage from Wetiko which includes ceasing to cooperate with its tyranny. Paul Levy says of Wetiko:

> The way to 'defeat' evil is not to try to destroy it (for then, in playing evil's game, we have already lost), but rather, to find the invulnerable place within ourselves where evil is unable to vanquish us – this is to truly 'win' our battle with evil.

Wetiko is everywhere in human society and it's been on steroids since the 'Covid' hoax. Every shouting match over wearing masks has Wetiko wearing a mask and Wetiko not wearing one. It's an electrical circuit of push and resist, push and resist, with Wetiko pushing *and* resisting. Each polarity is Wetiko empowering itself. Dictionary definitions of 'resist' include 'opposing, refusing to accept or comply with' and the word to focus on is 'opposing'. What form does this take – setting police cars alight or 'refusing to accept or comply with'? The former is Wetiko opposing Wetiko while the other points the way forward. This is the difference between those aggressively demanding that government fascism must be obeyed who stand in stark contrast to the great majority of Pushbackers. We saw this clearly with a march by thousands of Pushbackers against lockdown in London followed days later by a Woker-hijacked

protest in Bristol in which police cars were set on fire. Masks were virtually absent in London and widespread in Bristol. Wetiko wants lockdown on every level of society and infuses its aggression to police it through its unknowing stooges. Lockdown protesters are the ones with the smiling faces and the hugs, The two blatantly obvious states of being – getting more obvious by the day – are the result of Wokers and their like becoming ever more influenced by the simulation Field of Wetiko and Pushbackers ever more influenced by The Field of a far higher vibration beyond the simulation. Wetiko can't invade the heart which is where most lockdown opponents are coming from. It's the heart that allows them to see through the lies to the truth in ways I will be highlighting.

Renegade Minds know that calmness is the place from which wisdom comes. You won't find wisdom in a hissing fit and wisdom is what we need in abundance right now. Calmness is not weakness – you don't have to scream at the top of your voice to be strong. Calmness is indeed a sign of strength. 'No' means I'm not doing it. *NOOOO!!!* doesn't mean you're not doing it even more. Volume does not advance 'No – I'm not doing it'. You are just not doing it. Wetiko possessed and influenced don't know how to deal with that. Wetiko wants a fight and we should not give it one. What it needs more than anything is our *cooperation* and we should not give that either. Mass rallies and marches are great in that they are a visual representation of feeling, but if it ends there they are irrelevant. You demand that Wetikos act differently? Well, they're not going to are they? They are Wetikos. We don't need to waste our time demanding that something doesn't happen when that will make no difference. We need to delete the means that *allows* it to happen. This, invariably, is our cooperation. You can demand a child stop firing a peashooter at the dog or you can refuse to buy the peashooter. If you provide the means you are cooperating with the dog being smacked on the nose with a pea. How can the authorities enforce mask-wearing if millions in a country refuse? What if the 74 million Pushbackers that voted for Trump in 2020 refused to wear masks, close their businesses or stay in their homes. It would be unenforceable. The

few control the many through the compliance of the many and that's always been the dynamic be it 'Covid' regulations or the Roman Empire. I know people can find it intimidating to say no to authority or stand out in a crowd for being the only one with a face on display; but it has to be done or it's over. I hope I've made clear in this book that where this is going will be far more intimidating than standing up now and saying 'No' – I will not cooperate with my own enslavement and that of my children. There might be consequences for some initially, although not so if enough do the same. The question that must be addressed is what is going to happen if we don't? It is time to be strong and unyieldingly so. No means no. Not here and there, but *everywhere* and *always*. I have refused to wear a mask and obey all the other nonsense. I will not comply with tyranny. I repeat: Fascism is not imposed by fascists – there are never enough of them. Fascism is imposed by the population acquiescing to fascism. *I will not do it*. I will die first, or my body will. Living meekly under fascism is a form of death anyway, the death of the spirit that Martin Luther King described.

Making things happen

We must not despair. This is not over till it's over and it's far from that. The 'fat lady' must refuse to sing. The longer the 'Covid' hoax has dragged on and impacted on more lives we have seen an awakening of phenomenal numbers of people worldwide to the realisation that what they have believed all their lives is not how the world really is. Research published by the system-serving University of Bristol and King's College London in February, 2021, concluded: 'One in every 11 people in Britain say they trust David Icke's take on the coronavirus pandemic.' It will be more by now and we have gathering numbers to build on. We must urgently progress from seeing the scam to ceasing to cooperate with it. Prominent German lawyer Reiner Fuellmich, also licenced to practice law in America, is doing a magnificent job taking the legal route to bring the psychopaths to justice through a second Nuremberg tribunal for crimes against humanity. Fuellmich has an impressive record of

beating the elite in court and he formed the German Corona Investigative Committee to pursue civil charges against the main perpetrators with a view to triggering criminal charges. Most importantly he has grasped the foundation of the hoax – the PCR test not testing for the 'virus' – and Christian Drosten is therefore on his charge sheet along with Gates frontman Tedros at the World Health Organization. Major players must be not be allowed to inflict their horrors on the human race without being brought to book. A life sentence must follow for Bill Gates and the rest of them. A group of researchers has also indicted the government of Norway for crimes against humanity with copies sent to the police and the International Criminal Court. The lawsuit cites participation in an internationally-planned false pandemic and violation of international law and human rights, the European Commission's definition of human rights by coercive rules, Nuremberg and Hague rules on fundamental human rights, and the Norwegian constitution. We must take the initiative from hereon and not just complain, protest and react.

There are practical ways to support vital mass non-cooperation. Organising in numbers is one. Lockdown marches in London in the spring in 2021 were mass non-cooperation that the authorities could not stop. There were too many people. Hundreds of thousands walked the London streets in the centre of the road for mile after mile while the Face-Nappies could only look on. They were determined, but calm, and just *did it* with no histrionics and lots of smiles. The police were impotent. Others are organising group shopping without masks for mutual support and imagine if that was happening all over. Policing it would be impossible. If the store refuses to serve people in these circumstances they would be faced with a long line of trolleys full of goods standing on their own and everything would have to be returned to the shelves. How would they cope with that if it kept happening? I am talking here about moving on from complaining to being pro-active; from watching things happen to making things happen. I include in this our relationship with the police. The behaviour of many Face-Nappies

has been disgraceful and anyone who thinks they would never find concentration camp guards in the 'enlightened' modern era have had that myth busted big-time. The period and setting may change – Wetikos never do. I watched film footage from a London march in which a police thug viciously kicked a protestor on the floor who had done nothing. His fellow Face-Nappies stood in a ring protecting him. What he did was a criminal assault and with a crowd far outnumbering the police this can no longer be allowed to happen unchallenged. I get it when people chant 'shame on you' in these circumstances, but that is no longer enough. They *have* no shame those who do this. Crowds needs to start making a citizen's arrest of the police who commit criminal offences and brutally attack innocent people and defenceless women. A citizen's arrest can be made under section 24A of the UK Police and Criminal Evidence (PACE) Act of 1984 and you will find something similar in other countries. I prefer to call it a Common Law arrest rather than citizen's for reasons I will come to shortly. Anyone can arrest a person committing an indictable offence or if they have reasonable grounds to suspect they are committing an indictable offence. On both counts the attack by the police thug would have fallen into this category. A citizen's arrest can be made to stop someone:

- Causing physical injury to himself or any other person
- Suffering physical injury
- Causing loss of or damage to property
- Making off before a constable can assume responsibility for him

A citizen's arrest may also be made to prevent a breach of the peace under Common Law and if they believe a breach of the peace will happen or anything related to harm likely to be done or already done in their presence. This is the way to go I think – the Common Law version. If police know that the crowd and members of the public will no longer be standing and watching while they commit

their thuggery and crimes they will think twice about acting like Brownshirts and Blackshirts.

Common Law – common sense

Mention of Common Law is very important. Most people think the law is the law as in one law. This is not the case. There are two bodies of law, Common Law and Statute Law, and they are not the same. Common Law is founded on the simple premise of do no harm. It does not recognise victimless crimes in which no harm is done while Statute Law does. There is a Statute Law against almost everything. So what is Statute Law? Amazingly it's the law of the *sea* that was brought ashore by the Cult to override the law of the land which is Common Law. They had no right to do this and as always they did it anyway. They had to. They could not impose their will on the people through Common Law which only applies to do no harm. How could you stitch up the fine detail of people's lives with that? Instead they took the law of the sea, or Admiralty Law, and applied it to the population. Statute Law refers to all the laws spewing out of governments and their agencies including all the fascist laws and regulations relating to 'Covid'. The key point to make is that Statute Law is *contract law*. It only applies between *contracting* corporations. Most police officers don't even know this. They have to be kept in the dark, too. Long ago when merchants and their sailing ships began to trade with different countries a contractual law was developed called Admiralty Law and other names. Again it only applied to *contracts* agreed between *corporate* entities. If there is no agreed contract the law of the sea had no jurisdiction *and that still applies to its new alias of Statute Law*. The problem for the Cult when the law of the sea was brought ashore was an obvious one. People were not corporations and neither were government entities. To overcome the latter they made governments and all associated organisations corporations. All the institutions are *private corporations* and I mean governments and their agencies, local councils, police, courts, military, US states, the whole lot. Go to the

Dun and Bradstreet corporate listings website for confirmation that they are all corporations. You are arrested by a private corporation called the police by someone who is really a private security guard and they take you to court which is another private corporation. Neither have jurisdiction over you unless you consent and *contract* with them. This is why you hear the mantra about law enforcement policing by *consent* of the people. In truth the people 'consent' only in theory through monumental trickery.

Okay, the Cult overcame the corporate law problem by making governments and institutions corporate entities; but what about people? They are not corporations are they? Ah ... well in a sense, and *only* a sense, they are. Not people exactly – the illusion of people. The Cult creates a corporation in the name of everyone at the time that their birth certificate is issued. Note birth/ *berth* certificate and when you go to court under the law of the sea on land you stand in a *dock*. These are throwbacks to the origin. My Common Law name is David Vaughan Icke. The name of the corporation created by the government when I was born is called Mr David Vaughan Icke usually written in capitals as MR DAVID VAUGHAN ICKE. That is not me, the living, breathing man. It is a fictitious corporate entity. The trick is to make you think that David Vaughan Icke and MR DAVID VAUGHAN ICKE are the same thing. *They are not*. When police charge you and take you to court they are prosecuting the corporate entity and not the living, breathing, man or woman. They have to trick you into identifying as the corporate entity and contracting with them. Otherwise they have no jurisdiction. They do this through a language known as legalese. Lawful and legal are not the same either. Lawful relates to Common Law and legal relates to Statute Law. Legalese is the language of Statue Law which uses terms that mean one thing to the public and another in legalese. Notice that when a police officer tells someone why they are being charged he or she will say at the end: 'Do you understand?' To the public that means 'Do you comprehend?' In legalese it means 'Do you stand under me?' Do you stand under my authority? If you say

yes to the question you are unknowingly agreeing to give them jurisdiction over you in a contract between two corporate entities.

This is a confidence trick in every way. Contracts have to be agreed between informed parties and if you don't know that David Vaughan Icke is agreeing to be the corporation MR DAVID VAUGHAN ICKE you cannot knowingly agree to contract. They are deceiving you and another way they do this is to ask for proof of identity. You usually show them a driving licence or other document on which your corporate name is written. In doing so you are accepting that you are that corporate entity when you are not. Referring to yourself as a 'person' or 'citizen' is also identifying with your corporate fiction which is why I made the Common Law point about the citizen's arrest. If you are approached by a police officer you identify yourself immediately as a living, breathing, man or woman and say 'I do not consent, I do not contract with you and I do not understand' or stand under their authority. I have a Common Law birth certificate as a living man and these are available at no charge from commonlawcourt.com. Businesses registered under the Statute Law system means that its laws apply. There are, however, ways to run a business under Common Law. Remember all 'Covid' laws and regulations are Statute Law – the law of *contracts* and you do not have to contract. This doesn't mean that you can kill someone and get away with it. Common Law says do no harm and that applies to physical harm, financial harm etc. Police are employees of private corporations and there needs to be a new system of non-corporate Common Law constables operating outside the Statute Law system. If you go to davidicke.com and put Common Law into the search engine you will find videos that explain Common Law in much greater detail. It is definitely a road we should walk.

With all my heart

I have heard people say that we are in a spiritual war. I don't like the term 'war' with its Wetiko dynamic, but I know what they mean. Sweep aside all the bodily forms and we are in a situation in which two states of consciousness are seeking very different realities.

Wetiko wants upheaval, chaos, fear, suffering, conflict and control. The other wants love, peace, harmony, fairness and freedom. That's where we are. We should not fall for the idea that Wetiko is all-powerful and there's nothing we can do. Wetiko is not all-powerful. It's a joke, pathetic. It doesn't have to be, but it has made that choice for now. A handful of times over the years when I have felt the presence of its frequency I have allowed it to attach briefly so I could consciously observe its nature. The experience is not pleasant, the energy is heavy and dark, but the ease with which you can kick it back out the door shows that its real power is in persuading us that it has power. It's all a con. Wetiko is a con. It's a trickster and not a power that can control us if we unleash our own. The con is founded on manipulating humanity to give its power to Wetiko which recycles it back to present the illusion that it has power when its power is *ours* that we gave away. This happens on an energetic level and plays out in the world of the seen as humanity giving its power to Wetiko authority which uses that power to control the population when the power is only the power the population has handed over. How could it be any other way for billions to be controlled by a relative few? I have had experiences with people possessed by Wetiko and again you can kick its arse if you do it with an open heart. Oh yes – the *heart* which can transform the world of perceived 'matter'.

We are receiver-transmitters and processors of information, but what information and where from? Information is processed into perception in three main areas – the brain, the heart and the belly. These relate to thinking, knowing, and emotion. Wetiko wants us to be head and belly people which means we think within the confines of the Matrix simulation and low-vibrational emotional reaction scrambles balance and perception. A few minutes on social media and you see how emotion is the dominant force. Woke is all emotion and is therefore thought-free and fact-free. Our heart is something different. It *knows* while the head *thinks* and has to try to work it out because it doesn't know. The human energy field has seven prime vortexes which connect us with wider reality (Fig 23). Chakra means

'wheels of light' in the Sanskrit language of ancient India. The main ones are: The crown chakra on top of the head; brow (or 'third eye') chakra in the centre of the forehead; throat chakra; heart chakra in the centre of the chest; solar plexus chakra below the sternum; sacral chakra beneath the navel; and base chakra at the bottom of the spine. Each one has a particular function or functions. We feel anxiety and nervousness in the belly where the sacral chakra is located and this processes emotion that can affect the colon to give people 'the shits' or make them 'shit scared' when they are nervous. Chakras all play an important role, but the Mr and Mrs Big is the heart chakra which sits at the centre of the seven, above the chakras that connect us to the 'physical' and below those that connect with higher realms (or at least should). Here in the heart chakra we feel love, empathy and compassion – 'My heart goes out to you'. Those with closed hearts become literally 'heart-less' in their attitudes and behaviour (see Bill Gates). Native Americans portrayed Wetiko with what Paul Levy calls a 'frigid, icy heart, devoid of mercy' (see Bill Gates).

Figure 23: The chakra system which interpenetrates the human energy field. The heart chakra is the governor – or should be.

Wetiko trembles at the thought of heart energy which it cannot infiltrate. The frequency is too high. What it seeks to do instead is close the heart chakra vortex to block its perceptual and energetic influence. Psychopaths have 'hearts of stone' and emotionally-damaged people have 'heartache' and 'broken hearts'. The astonishing amount of heart disease is related to heart chakra

disruption with its fundamental connection to the 'physical' heart. Dr Tom Cowan has written an outstanding book challenging the belief that the heart is a pump and making the connection between the 'physical' and spiritual heart. Rudolph Steiner who was way ahead of his time said the same about the fallacy that the heart is a pump. *What*? The heart is not a pump? That's crazy, right? Everybody knows that. Read Cowan's *Human Heart, Cosmic Heart* and you will realise that the very idea of the heart as a pump is ridiculous when you see the evidence. How does blood in the feet so far from the heart get pumped horizontally up the body by the heart?? Cowan explains in the book the real reason why blood moves as it does. Our 'physical' heart is used to symbolise love when the source is really the heart vortex or spiritual heart which is our most powerful energetic connection to 'out there' expanded consciousness. That's why we feel *knowing* – intuitive knowing – in the centre of the chest. Knowing doesn't come from a process of thoughts leading to a conclusion. It is there in an instant all in one go. Our heart knows because of its connection to levels of awareness that *do* know. This is the meaning and source of intuition – intuitive *knowing*.

For the last more than 30 years of uncovering the global game and the nature of reality my heart has been my constant antenna for truth and accuracy. An American intelligence insider once said that I had quoted a disinformer in one of my books and yet I had only quoted the part that was true. He asked: 'How do you do that?' By using my heart antenna was the answer and anyone can do it. Heart-centred is how we are meant to be. With a closed heart chakra we withdraw into a closed mind and the bubble of five-sense reality. If you take a moment to focus your attention on the centre of your chest, picture a spinning wheel of light and see it opening and expanding. You will feel it happening, too, and perceptions of the heart like joy and love as the heart impacts on the mind as they interact. The more the chakra opens the more you will feel expressions of heart consciousness and as the process continues, and becomes part of you, insights and knowings will follow. An open

heart is connected to that level of awareness that knows all is *One*. You will see from its perspective that the fault-lines that divide us are only illusions to control us. An open heart does not process the illusions of race, creed and sexuality except as brief experiences for a consciousness that is all. Our heart does not see division, only unity (Figs 24 and 25). There's something else, too. Our hearts love to laugh. Mark Twain's quote that says 'The human race has one really effective weapon, and that is laughter' is really a reference to the heart which loves to laugh with the joy of knowing the true nature of infinite reality and that all the madness of human society is an illusion of the mind. Twain also said: 'Against the assault of laughter nothing can stand.' This is so true of Wetiko and the Cult. Their insecurity demands that they be taken seriously and their power and authority acknowledged and feared. We should do nothing of the sort. We should not get aggressive or fearful which their insecurity so desires. We should laugh in their face. Even in their no-face as police come over in their face-nappies and expect to be taken seriously. They don't take themselves seriously looking like that so why should we? Laugh in the face of intimidation. Laugh in the face of tyranny. You will see by its reaction that you have pressed all of its buttons. Wetiko does not know what to do in the face of laughter or when its targets refuse to concede their joy to fear. We have seen many examples during the 'Covid' hoax when people have expressed their energetic power and the string puppets of Wetiko retreat with their tail limp between their knees. Laugh – the world is bloody mad after all and if it's a choice between laughter and tears I know which way I'm going.

Figure 24: Head consciousness without the heart sees division and everything apart from everything else.

Figure 25: Heart consciousness sees everything as One.

'Vaccines' and the soul

The foundation of Wetiko/Archon control of humans is the separation of incarnate five-sense mind from the infinite 'I' and closing the heart chakra where the True 'I' lives during a human life. The goal has been to achieve complete separation in both cases. I was interested therefore to read an account by a French energetic healer of what she said she experienced with a patient who had been given the 'Covid' vaccine. Genuine energy healers can sense information and consciousness fields at different levels of being which are referred to as 'subtle bodies'. She described treating the patient who later returned after having, without the healer's knowledge, two doses of the 'Covid vaccine'. The healer said:

I noticed immediately the change, very heavy energy emanating from [the] subtle bodies. The scariest thing was when I was working on the heart chakra, I connected with her soul: it was detached from the physical body, it had no contact and it was, as if it was floating in a state of total confusion: a damage to the consciousness that loses contact with the physical body, i.e. with our biological machine, there is no longer any communication between them.

I continued the treatment by sending light to the heart chakra, the soul of the person, but it seemed that the soul could no longer receive any light, frequency or energy. It was a very powerful experience for me. Then I understood that this substance is indeed used to detach consciousness so that this consciousness can no longer interact through this body that it possesses in life, where there is no longer any contact, no frequency, no light, no more energetic balance or mind.

This would create a human that is rudderless and at the extreme almost zombie-like operating with a fractional state of consciousness at the mercy of Wetiko. I was especially intrigued by what the healer said in the light of the prediction by the highly-informed Rudolf Steiner more than a hundred years ago. He said:

In the future, we will eliminate the soul with medicine. Under the pretext of a 'healthy point of view', there will be a vaccine by which the human body will be treated as soon as possible directly at birth, so that the human being cannot develop the thought of the existence of soul and Spirit. To materialistic doctors will be entrusted the task of removing the soul of humanity.

As today, people are vaccinated against this disease or that disease, so in the future, children will be vaccinated with a substance that can be produced precisely in such a way that people, thanks to this vaccination, will be immune to being subjected to the 'madness' of spiritual life. He would be extremely smart, but he would not develop a conscience, and that is the true goal of some materialistic circles.

Steiner said the vaccine would detach the physical body from the etheric body (subtle bodies) and 'once the etheric body is detached the relationship between the universe and the etheric body would become extremely unstable, and man would become an automaton'. He said 'the physical body of man must be polished on this Earth by spiritual will – so the vaccine becomes a kind of arymanique (Wetiko) force' and 'man can no longer get rid of a given materialistic feeling'. Humans would then, he said, become 'materialistic of constitution and can no longer rise to the spiritual'. I have been writing for years about DNA being a receiver-transmitter of information that connects us to other levels of reality and these 'vaccines' changing DNA can be likened to changing an antenna and what it can transmit and receive. Such a disconnection would clearly lead to changes in personality and perception. Steiner further predicted the arrival of AI. Big Pharma 'Covid vaccine' makers, expressions of Wetiko, are testing their DNA-manipulating evil on children as I write with a view to giving the 'vaccine' to babies. If it's a soul-body disconnector – and I say that it is or can be – every child would be disconnected from 'soul' at birth and the 'vaccine' would create a closed system in which spiritual guidance from the greater self would play no part. This has been the ambition of Wetiko all

along. A Pentagon video from 2005 was leaked of a presentation explaining the development of vaccines to change behaviour by their effect on the brain. Those that believe this is not happening with the 'Covid' genetically-modifying procedure masquerading as a 'vaccine' should make an urgent appointment with Naivety Anonymous. Klaus Schwab wrote in 2018:

> Neurotechnologies enable us to better influence consciousness and thought and to understand many activities of the brain. They include decoding what we are thinking in fine levels of detail through new chemicals and interventions that can influence our brains to correct for errors or enhance functionality.

The plan is clear and only the heart can stop it. With every heart that opens, every mind that awakens, Wetiko is weakened. Heart and love are far more powerful than head and hate and so nothing like a majority is needed to turn this around.

Beyond the Phantom

Our heart is the prime target of Wetiko and so it must be the answer to Wetiko. We *are* our heart which is part of one heart, the infinite heart. Our heart is where the true self lives in a human life behind firewalls of five-sense illusion when an imposter takes its place – *Phantom Self*; but our heart waits patiently to be set free any time we choose to see beyond the Phantom, beyond Wetiko. A Wetikoed Phantom Self can wreak mass death and destruction while the love of forever is locked away in its heart. The time is here to unleash its power and let it sweep away the fear and despair that is Wetiko. Heart consciousness does not seek manipulated, censored, advantage for its belief or religion, its activism and desires. As an expression of the One it treats all as One with the same rights to freedom and opinion. Our heart demands fairness for itself no more than for others. From this unity of heart we can come together in mutual support and transform this Wetikoed world into what reality is meant to be – a place of love, joy, happiness, fairness, justice and freedom. Wetiko has another agenda and that's why the world is as

it is, but enough of this nonsense. Wetiko can't stay where hearts are open and it works so hard to keep them closed. Fear is its currency and its food source and love in its true sense has no fear. Why would love have fear when it knows it is *All That Is, Has Been, And Ever Can Be* on an eternal exploration of all possibility? Love in this true sense is not the physical attraction that passes for love. This can be an expression of it, yes, but Infinite Love, a love without condition, goes far deeper to the core of all being. It *is* the core of all being. Infinite realty was born from love beyond the illusions of the simulation. Love infinitely expressed is the knowing that all is One and the swiftly-passing experience of separation is a temporary hallucination. You cannot disconnect from Oneness; you can only *perceive* that you have and withdraw from its influence. This is the most important of all perception trickery by the mind parasite that is Wetiko and the foundation of all its potential for manipulation.

If we open our hearts, open the sluice gates of the mind, and redefine self-identity amazing things start to happen. Consciousness expands or contracts in accordance with self-identity. When true self is recognised as infinite awareness and label self – Phantom Self – is seen as only a series of brief experiences life is transformed. Consciousness expands to the extent that self-identity expands and everything changes. You see unity, not division, the picture, not the pixels. From this we can play the long game. No more is an experience something in and of itself, but a fleeting moment in the eternity of forever. Suddenly people in uniform and dark suits are no longer intimidating. Doing what your heart knows to be right is no longer intimidating and consequences for those actions take on the same nature of a brief experience that passes in the blink of an infinite eye. Intimidation is all in the mind. Beyond the mind there is no intimidation.

An open heart does not consider consequences for what it knows to be right. To do so would be to consider not doing what it knows to be right and for a heart in its power that is never an option. The Renegade Mind is really the Renegade Heart. Consideration of consequences will always provide a getaway car for the mind and

the heart doesn't want one. What is right in the light of what we face today is to stop cooperating with Wetiko in all its forms and to do it without fear or compromise. You cannot compromise with tyranny when tyranny always demands more until it has everything. Life is your perception and you are your destiny. Change your perception and you change your life. Change collective perception and we change the world.

Come on people … One human family, One heart, One goal … *FREEEEEEDOM*!

We must settle for nothing less.

Postscript

The big scare story as the book goes to press is the 'Indian' variant and the world is being deluged with propaganda about the 'Covid catastrophe' in India which mirrors in its lies and misrepresentations what happened in Italy before the first lockdown in 2020.

The *New York Post* published a picture of someone who had 'collapsed in the street from Covid' in India in April, 2021, which was actually taken during a gas leak in May, 2020. Same old, same old. Media articles in mid-February were asking why India had been so untouched by 'Covid' and then as their vaccine rollout gathered pace the alleged 'cases' began to rapidly increase. Indian 'Covid vaccine' maker Bharat Biotech was funded into existence by the Bill and Melinda Gates Foundation (the pair announced their divorce in May, 2021, which is a pity because they so deserve each other). The Indian 'Covid crisis' was ramped up by the media to terrify the world and prepare people for submission to still more restrictions. The scam that worked the first time was being repeated only with far more people seeing through the deceit. Davidicke.com and Ickonic.com have sought to tell the true story of what is happening by talking to people living through the Indian nightmare which has nothing to do with 'Covid'. We posted a letter from 'Alisha' in Pune who told a very different story to government and media mendacity. She said scenes of dying people and overwhelmed hospitals were designed to hide what was really happening – genocide and starvation. Alisha said that millions had already died of starvation during the ongoing lockdowns while government and media were lying and making it look like the 'virus':

Restaurants, shops, gyms, theatres, basically everything is shut. The cities are ghost towns. Even so-called 'essential' businesses are only open till 11am in the morning. You basically have just an hour to buy food and then your time is up.

Inter-state travel and even inter-district travel is banned. The cops wait at all major crossroads to question why you are traveling outdoors or to fine you if you are not wearing a mask.

The medical community here is also complicit in genocide, lying about hospitals being full and turning away people with genuine illnesses, who need immediate care. They have even created a shortage of oxygen cylinders.

This is the classic Cult modus operandi played out in every country. Alisha said that people who would not have a PCR test not testing for the 'virus' were being denied hospital treatment. She said the people hit hardest were migrant workers and those in rural areas. Most businesses employed migrant workers and with everything closed there were no jobs, no income and no food. As a result millions were dying of starvation or malnutrition. All this was happening under Prime Minister Narendra Modi, a 100-percent asset of the Cult, and it emphasises yet again the scale of pure anti-human evil we are dealing with. Australia banned its people from returning home from India with penalties for trying to do so of up to five years in jail and a fine of £37,000. The manufactured 'Covid' crisis in India was being prepared to justify further fascism in the West. Obvious connections could be seen between the Indian 'vaccine' programme and increased 'cases' and this became a common theme. The Seychelles, the most per capita 'Covid vaccinated' population in the world, went back into lockdown after a 'surge of cases'.

Long ago the truly evil Monsanto agricultural biotechnology corporation with its big connections to Bill Gates devastated Indian farming with genetically-modified crops. Human rights activist Gurcharan Singh highlighted the efforts by the Indian government to complete the job by destroying the food supply to hundreds of millions with 'Covid' lockdowns. He said that 415 million people at the bottom of the disgusting caste system (still going whatever they say) were below the poverty line and struggled to feed themselves every year. Now the government was imposing lockdown at just the

time to destroy the harvest. This deliberate policy was leading to mass starvation. People may reel back at the suggestion that a government would do that, but Wetiko-controlled 'leaders' are capable of any level of evil. In fact what is described in India is in the process of being instigated worldwide. The food chain and food supply are being targeted at every level to cause world hunger and thus control. Bill Gates is not the biggest owner of farmland in America for no reason and destroying access to food aids both the depopulation agenda and the plan for synthetic 'food' already being funded into existence by Gates. Add to this the coming hyper-inflation from the suicidal creation of fake 'money' in response to 'Covid' and the breakdown of container shipping systems and you have a cocktail that can only lead one way and is meant to. The Cult plan is to crash the entire system to 'build back better' with the Great Reset.

'Vaccine' transmission

Reports from all over the world continue to emerge of women suffering menstrual and fertility problems after having the fake 'vaccine' and of the non-'vaccinated' having similar problems when interacting with the 'vaccinated'. There are far too many for 'coincidence' to be credible. We've had menopausal women getting periods, others having periods stop or not stopping for weeks, passing clots, sometimes the lining of the uterus, breast irregularities, and miscarriages (which increased by 400 percent in parts of the United States). Non-'vaccinated' men and children have suffered blood clots and nose bleeding after interaction with the 'vaccinated'. Babies have died from the effects of breast milk from a 'vaccinated' mother. Awake doctors – the small minority – speculated on the cause of non-'vaccinated' suffering the same effects as the 'vaccinated'. Was it nanotechnology in the synthetic substance transmitting frequencies or was it a straight chemical bioweapon that was being transmitted between people? I am not saying that some kind of chemical transmission is not one possible answer, but the foundation of all that the Cult does is frequency and

this is fertile ground for understanding how transmission can happen. American doctor Carrie Madej, an internal medicine physician and osteopath, has been practicing for the last 20 years, teaching medical students, and she says attending different meetings where the agenda for humanity was discussed. Madej, who operates out of Georgia, did not dismiss other possible forms of transmission, but she focused on frequency in search of an explanation for transmission. She said the Moderna and Pfizer 'vaccines' contained nano-lipid particles as a key component. This was a brand new technology never before used on humanity. 'They're using a nanotechnology which is pretty much little tiny computer bits … nanobots or hydrogel.' Inside the 'vaccines' was 'this sci-fi kind of substance' which suppressed immune checkpoints to get into the cell. I referred to this earlier as the 'Trojan horse' technique that tricks the cell into opening a gateway for the self-replicating synthetic material and while the immune system is artificially suppressed the body has no defences. Madej said the substance served many purposes including an on-demand ability to 'deliver the payload' and using the nano 'computer bits' as biosensors in the body. 'It actually has the ability to accumulate data from your body, like your breathing, your respiration, thoughts, emotions, all kinds of things.'

She said the technology obviously has the ability to operate through Wi-Fi and transmit and receive energy, messages, frequencies or impulses. 'Just imagine you're getting this new substance in you and it can react to things all around you, the 5G, your smart device, your phones.' We had something completely foreign in the human body that had never been launched large scale at a time when we were seeing 5G going into schools and hospitals (plus the Musk satellites) and she believed the 'vaccine' transmission had something to do with this: '… if these people have this inside of them … it can act like an antenna and actually transmit it outwardly as well.' The synthetic substance produced its own voltage and so it could have that kind of effect. This fits with my own contention that the nano receiver-transmitters are designed to connect people to the

Smart Grid and break the receiver-transmitter connection to expanded consciousness. That would explain the French energy healer's experience of the disconnection of body from 'soul' with those who have had the 'vaccine'. The nanobots, self-replicating inside the body, would also transmit the synthetic frequency which could be picked up through close interaction by those who have not been 'vaccinated'. Madej speculated that perhaps it was 5G and increased levels of other radiation that was causing the symptoms directly although interestingly she said that non-'vaccinated' patients had shown improvement when they were away from the 'vaccinated' person they had interacted with. It must be remembered that you can control frequency and energy with your mind and you can consciously create energetic barriers or bubbles with the mind to stop damaging frequencies from penetrating your field. American paediatrician Dr Larry Palevsky said the 'vaccine' was not a 'vaccine' and was never designed to protect from a 'viral' infection. He called it 'a massive, brilliant propaganda of genocide' because they didn't have to inject everyone to get the result they wanted. He said the content of the jabs was able to infuse any material into the brain, heart, lungs, kidneys, liver, sperm and female productive system. 'This is genocide; this is a weapon of mass destruction.' At the same time American colleges were banning students from attending if they didn't have this life-changing and potentially life-ending 'vaccine'. Class action lawsuits must follow when the consequences of this college fascism come to light. As the book was going to press came reports about fertility effects on sperm in 'vaccinated' men which would absolutely fit with what I have been saying and hospitals continued to fill with 'vaccine' reactions. Another question is what about transmission via blood transfusions? The NHS has extended blood donation restrictions from seven days after a 'Covid vaccination' to 28 days after even a sore arm reaction.

I said in the spring of 2020 that the then touted 'Covid vaccine' would be ongoing each year like the flu jab. A year later Pfizer CEO, the appalling Albert Bourla, said people would 'likely' need a 'booster dose' of the 'vaccine' within 12 months of getting 'fully

vaccinated' and then a yearly shot. 'Variants will play a key role', he said confirming the point. Johnson & Johnson CEO Alex Gorsky also took time out from his 'vaccine' disaster to say that people may need to be vaccinated against 'Covid-19' each year. UK Health Secretary, the psychopath Matt Hancock, said additional 'boosters' would be available in the autumn of 2021. This is the trap of the 'vaccine passport'. The public will have to accept every last 'vaccine' they introduce, including for the fake 'variants', or it would cease to be valid. The only other way in some cases would be continuous testing with a test not testing for the 'virus' and what is on the swabs constantly pushed up your noise towards the brain every time?

'Vaccines' changing behaviour

I mentioned in the body of the book how I believed we would see gathering behaviour changes in the 'vaccinated' and I am already hearing such comments from the non-'vaccinated' describing behaviour changes in friends, loved ones and work colleagues. This will only increase as the self-replicating synthetic material and nanoparticles expand in body and brain. An article in the *Guardian* in 2016 detailed research at the University of Virginia in Charlottesville which developed a new method for controlling brain circuits associated with complex animal behaviour. The method, dubbed 'magnetogenetics', involves genetically-engineering a protein called ferritin, which stores and releases iron, to create a magnetised substance – 'Magneto' – that can activate specific groups of nerve cells from a distance. This is claimed to be an advance on other methods of brain activity manipulation known as optogenetics and chemogenetics (the Cult has been developing methods of brain control for a long time). The ferritin technique is said to be non-invasive and able to activate neurons 'rapidly and reversibly'. In other words, human thought and perception. The article said that earlier studies revealed how nerve cell proteins 'activated by heat and mechanical pressure can be genetically engineered so that they become sensitive to radio waves and magnetic fields, by attaching them to an iron-storing protein called ferritin, or to inorganic

paramagnetic particles'. Sensitive to radio waves and magnetic fields? You mean like 5G, 6G and 7G? This is the human-AI Smart Grid hive mind we are talking about. The *Guardian* article said:

> … the researchers injected Magneto into the striatum of freely behaving mice, a deep brain structure containing dopamine-producing neurons that are involved in reward and motivation, and then placed the animals into an apparatus split into magnetised and non-magnetised sections.
>
> Mice expressing Magneto spent far more time in the magnetised areas than mice that did not, because activation of the protein caused the striatal neurons expressing it to release dopamine, so that the mice found being in those areas rewarding. This shows that Magneto can remotely control the firing of neurons deep within the brain, and also control complex behaviours.

Make no mistake this basic methodology will be part of the 'Covid vaccine' cocktail and using magnetics to change brain function through electromagnetic field frequency activation. The Pentagon is developing a 'Covid vaccine' using ferritin. Magnetics would explain changes in behaviour and why videos are appearing across the Internet as I write showing how magnets stick to the skin at the point of the 'vaccine' shot. Once people take these 'vaccines' anything becomes possible in terms of brain function and illness which will be blamed on 'Covid-19' and 'variants'. Magnetic field manipulation would further explain why the non-'vaccinated' are reporting the same symptoms as the 'vaccinated' they interact with and why those symptoms are reported to decrease when not in their company. Interestingly 'Magneto', a 'mutant', is a character in the Marvel Comic *X-Men* stories with the ability to manipulate magnetic fields and he believes that mutants should fight back against their human oppressors by any means necessary. The character was born Erik Lehnsherr to a Jewish family in Germany.

Cult-controlled courts

The European Court of Human Rights opened the door for mandatory 'Covid-19 vaccines' across the continent when it ruled in a Czech Republic dispute over childhood immunisation that legally

enforced vaccination could be 'necessary in a democratic society'. The 17 judges decided that compulsory vaccinations did not breach human rights law. On the face of it the judgement was so inverted you gasp for air. If not having a vaccine infused into your body is not a human right then what is? Ah, but they said human rights law which has been specifically written to delete all human rights at the behest of the state (the Cult). Article 8 of the European Convention on Human Rights relates to the right to a private life. The crucial word here is *'except'*:

> There shall be no interference by a public authority with the exercise of this right EXCEPT such as is in accordance with the law and is necessary in a democratic society in the interests of national security, public safety or the economic wellbeing of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of others [My emphasis].

No interference *except* in accordance with the law means there *are* no 'human rights' *except* what EU governments decide you can have at their behest. 'As is necessary in a democratic society' explains that reference in the judgement and 'in the interests of national security, public safety or the economic well-being of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of others' gives the EU a coach and horses to ride through 'human rights' and scatter them in all directions. The judiciary is not a check and balance on government extremism; it is a vehicle to enforce it. This judgement was almost laughably predictable when the last thing the Cult wanted was a decision that went against mandatory vaccination. Judges rule over and over again to benefit the system of which they are a part. Vaccination disputes that come before them are invariably delivered in favour of doctors and authorities representing the view of the state which owns the judiciary. Oh, yes, and we have even had calls to stop putting 'Covid-19' on death certificates within 28 days of a 'positive test' because it is claimed the practice makes the 'vaccine' appear not to work. They are laughing at you.

The scale of madness, inhumanity and things to come was highlighted when those not 'vaccinated' for 'Covid' were refused evacuation from the Caribbean island of St Vincent during massive volcanic eruptions. Cruise ships taking residents to the safety of another island allowed only the 'vaccinated' to board and the rest were left to their fate. Even in life and death situations like this we see 'Covid' stripping people of their most basic human instincts and the insanity is even more extreme when you think that fake 'vaccine'-makers are not even claiming their body-manipulating concoctions stop 'infection' and 'transmission' of a 'virus' that doesn't exist. St Vincent Prime Minister Ralph Gonsalves said: 'The chief medical officer will be identifying the persons already vaccinated so that we can get them on the ship.' Note again the power of the chief medical officer who, like Whitty in the UK, will be answering to the World Health Organization. This is the Cult network structure that has overridden politicians who 'follow the science' which means doing what WHO-controlled 'medical officers' and 'science advisers' tell them. Gonsalves even said that residents who were 'vaccinated' after the order so they could board the ships would still be refused entry due to possible side effects such as 'wooziness in the head'. The good news is that if they were woozy enough in the head they could qualify to be prime minister of St Vincent.

Microchipping freedom

The European judgement will be used at some point to justify moves to enforce the 'Covid' DNA-manipulating procedure. Sandra Ro, CEO of the Global Blockchain Business Council, told a World Economic Forum event that she hoped 'vaccine passports' would help to 'drive forced consent and standardisation' of global digital identity schemes: 'I'm hoping with the desire and global demand for some sort of vaccine passport – so that people can get travelling and working again – [it] will drive forced consent, standardisation, and frankly, cooperation across the world.' The lady is either not very bright, or thoroughly mendacious, to use the term 'forced consent'.

You do not 'consent' if you are forced – you *submit*. She was describing what the plan has been all along and that's to enforce a digital identity on every human without which they could not function. 'Vaccine passports' are opening the door and are far from the end goal. A digital identity would allow you to be tracked in everything you do in cyberspace and this is the same technique used by Cult-owned China to enforce its social credit system of total control. The ultimate 'passport' is planned to be a microchip as my books have warned for nearly 30 years. Those nice people at the Pentagon working for the Cult-controlled Defense Advanced Research Projects Agency (DARPA) claimed in April, 2021, they have developed a microchip inserted under the skin to detect 'asymptomatic Covid-19 infection' before it becomes an outbreak and a 'revolutionary filter' that can remove the 'virus' from the blood when attached to a dialysis machine. The only problems with this are that the 'virus' does not exist and people transmitting the 'virus' with no symptoms is brain-numbing bullshit. This is, of course, not a ruse to get people to be microchipped for very different reasons. DARPA also said it was producing a one-stop 'vaccine' for the 'virus' and all 'variants'. One of the most sinister organisations on Planet Earth is doing this? Better have it then. These people are insane because Wetiko that possesses them is insane.

Researchers from the Salk Institute in California announced they have created an embryo that is part human and part monkey. My books going back to the 1990s have exposed experiments in top secret underground facilities in the United States where humans are being crossed with animal and non-human 'extraterrestrial' species. They are now easing that long-developed capability into the public arena and there is much more to come given we are dealing with psychiatric basket cases. Talking of which – Elon Musk's scientists at Neuralink trained a monkey to play Pong and other puzzles on a computer screen using a joystick and when the monkey made the correct move a metal tube squirted banana smoothie into his mouth which is the basic technique for training humans into unquestioning compliance. Two Neuralink chips were in the monkey's skull and

more than 2,000 wires 'fanned out' into its brain. Eventually the monkey played a video game purely with its brain waves. Psychopathic narcissist Musk said the 'breakthrough' was a step towards putting Neuralink chips into human skulls and merging minds with artificial intelligence. *Exactly*. This man is so dark and Cult to his DNA.

World Economic Fascism (WEF)

The World Economic Forum is telling you the plan by the statements made at its many and various events. Cult-owned fascist YouTube CEO Susan Wojcicki spoke at the 2021 WEF Global Technology Governance Summit (see the name) in which 40 governments and 150 companies met to ensure 'the responsible design and deployment of emerging technologies'. Orwellian translation: 'Ensuring the design and deployment of long-planned technologies will advance the Cult agenda for control and censorship.' Freedom-destroyer and Nuremberg-bound Wojcicki expressed support for tech platforms like hers to censor content that is 'technically legal but could be harmful'. Who decides what is 'harmful'? She does and they do. 'Harmful' will be whatever the Cult doesn't want people to see and we have legislation proposed by the UK government that would censor content on the basis of 'harm' no matter if the information is fair, legal and provably true. Make that *especially* if it is fair, legal and provably true. Wojcicki called for a global coalition to be formed to enforce content moderation standards through automated censorship. This is a woman and mega-censor so self-deluded that she shamelessly accepted a 'free expression' award – *Wojcicki* – in an event sponsored by her own *YouTube*. They have no shame and no self-awareness.

You know that 'Covid' is a scam and Wojcicki a Cult operative when YouTube is censoring medical and scientific opinion purely on the grounds of whether it supports or opposes the Cult 'Covid' narrative. Florida governor Ron DeSantis compiled an expert panel with four professors of medicine from Harvard, Oxford, and Stanford Universities who spoke against forcing children and

vaccinated people to wear masks. They also said there was no proof that lockdowns reduced spread or death rates of 'Covid-19'. Cult-gofer Wojcicki and her YouTube deleted the panel video 'because it included content that contradicts the consensus of local and global health authorities regarding the efficacy of masks to prevent the spread of Covid-19'. This 'consensus' refers to what the Cult tells the World Health Organization to say and the WHO tells 'local health authorities' to do. Wojcicki knows this, of course. The panellists pointed out that censorship of scientific debate was responsible for deaths from many causes, but Wojcicki couldn't care less. She would not dare go against what she is told and as a disgrace to humanity she wouldn't want to anyway. The UK government is seeking to pass a fascist 'Online Safety Bill' to specifically target with massive fines and other means non-censored video and social media platforms to make them censor 'lawful but harmful' content like the Cult-owned Facebook, Twitter, Google and YouTube. What is 'lawful but harmful' would be decided by the fascist Blair-created Ofcom.

Another WEF obsession is a cyber-attack on the financial system and this is clearly what the Cult has planned to take down the bank accounts of everyone – except theirs. Those that think they have enough money for the Cult agenda not to matter to them have got a big lesson coming if they continue to ignore what is staring them in the face. The World Economic Forum, funded by Gates and fronted by Klaus Schwab, announced it would be running a 'simulation' with the Russian government and global banks of just such an attack called Cyber Polygon 2021. What they simulate – as with the 'Covid' Event 201 – they plan to instigate. The WEF is involved in a project with the Cult-owned Carnegie Endowment for International Peace called the WEF-Carnegie Cyber Policy Initiative which seeks to merge Wall Street banks, 'regulators' (I love it) and intelligence agencies to 'prevent' (arrange and allow) a cyber-attack that would bring down the global financial system as long planned by those that control the WEF and the Carnegie operation. The Carnegie Endowment for International Peace sent an instruction to First World

War US President Woodrow Wilson not to let the war end before society had been irreversibly transformed.

The Wuhan lab diversion

As I close, the Cult-controlled authorities and lapdog media are systematically pushing 'the virus was released from the Wuhan lab' narrative. There are two versions – it happened by accident and it happened on purpose. Both are nonsense. The perceived existence of the never-shown-to-exist 'virus' is vital to sell the impression that there is actually an infective agent to deal with and to allow the endless potential for terrifying the population with 'variants' of a 'virus' that does not exist. The authorities at the time of writing are going with the 'by accident' while the alternative media is promoting the 'on purpose'. Cable news host Tucker Carlson who has questioned aspects of lockdown and 'vaccine' compulsion has bought the Wuhan lab story. 'Everyone now agrees' he said. Well, I don't and many others don't and the question is *why* does the system and its media suddenly 'agree'? When the media moves as one unit with a narrative it is always a lie – witness the hour by hour mendacity of the 'Covid' era. Why would this Cult-owned combination which has unleashed lies like machine gun fire suddenly 'agree' to tell the truth??

Much of the alternative media is buying the lie because it fits the conspiracy narrative, but it's the *wrong* conspiracy. The real conspiracy is that *there is no virus* and that is what the Cult is desperate to hide. The idea that the 'virus' was released by accident is ludicrous when the whole 'Covid' hoax was clearly long-planned and waiting to be played out as it was so fast in accordance with the Rockefeller document and Event 201. So they prepared everything in detail over decades and then sat around strumming their fingers waiting for an 'accidental' release from a bio-lab? *What??* It's crazy. Then there's the 'on purpose' claim. You want to circulate a 'deadly virus' and hide the fact that you've done so and you release it down the street from the highest-level bio-lab in China? I repeat – *What??*

You would release it far from that lab to stop any association being made. But, no, we'll do it in a place where the connection was certain to be made. Why would you need to scam 'cases' and 'deaths' and pay hospitals to diagnose 'Covid-19' if you had a real 'virus'? What are sections of the alternative media doing believing this crap? Where were all the mass deaths in Wuhan from a 'deadly pathogen' when the recovery to normal life after the initial propaganda was dramatic in speed? Why isn't the 'deadly pathogen' now circulating all over China with bodies in the street? Once again we have the technique of tell them what they want to hear and they will likely believe it. The alternative media has its 'conspiracy' and with Carlson it fits with his 'China is the danger' narrative over years. China *is* a danger as a global Cult operations centre, but not for this reason. The Wuhan lab story also has the potential to instigate conflict with China when at some stage the plan is to trigger a Problem-Reaction-Solution confrontation with the West. Question everything – *everything* – and especially when the media agrees on a common party line.

Third wave ... fourth wave ... fifth wave ...

As the book went into production the world was being set up for more lockdowns and a 'third wave' supported by invented 'variants' that were increasing all the time and will continue to do so in public statements and computer programs, but not in reality. India became the new Italy in the 'Covid' propaganda campaign and we were told to be frightened of the new 'Indian strain'. Somehow I couldn't find it within myself to do so. A document produced for the UK government entitled 'Summary of further modelling of easing of restrictions – Roadmap Step 2' declared that a third wave was inevitable (of course when it's in the script) and it would be the fault of children and those who refuse the health-destroying fake 'Covid vaccine'. One of the computer models involved came from the Cult-owned *Imperial College* and the other from Warwick University which I wouldn't trust to tell me the date in a calendar factory. The document states that both models presumed extremely high uptake

of the 'Covid vaccines' and didn't allow for 'variants'. The document states: 'The resurgence is a result of some people (mostly children) being ineligible for vaccination; others choosing not to receive the vaccine; and others being vaccinated but not perfectly protected.' The mendacity takes the breath away. Okay, blame those with a brain who won't take the DNA-modifying shots and put more pressure on children to have it as 'trials' were underway involving children as young as six months with parents who give insanity a bad name. Massive pressure is being put on the young to have the fake 'vaccine' and child age consent limits have been systematically lowered around the world to stop parents intervening. Most extraordinary about the document was its claim that the 'third wave' would be driven by 'the resurgence in both hospitalisations and deaths … dominated by *those that have received two doses of the vaccine*, comprising around 60-70% of the wave respectively'. The predicted peak of the 'third wave' suggested 300 deaths per day with 250 of them *fully 'vaccinated' people*. How many more lies do acquiescers need to be told before they see the obvious? Those who took the jab to 'protect themselves' are projected to be those who mostly get sick and die? So what's in the 'vaccine'? The document went on:

> It is possible that a summer of low prevalence could be followed by substantial increases in incidence over the following autumn and winter. Low prevalence in late summer should not be taken as an indication that SARS-CoV-2 has retreated or that the population has high enough levels of immunity to prevent another wave.

They are telling you the script and while many British people believed 'Covid' restrictions would end in the summer of 2021 the government was preparing for them to be ongoing. Authorities were awarding contracts for 'Covid marshals' to police the restrictions with contracts starting in July, 2021, and going through to January 31st, 2022, and the government was advertising for 'Media Buying Services' to secure media propaganda slots worth a potential £320 million for 'Covid-19 campaigns' with a contract not ending until March, 2022. The recipient – via a list of other front companies – was reported to be American media marketing giant Omnicom Group

Inc. While money is no object for 'Covid' the UK waiting list for all other treatment – including life-threatening conditions – passed 4.5 million. Meantime the Cult is seeking to control all official 'inquiries' to block revelations about what has really been happening and why. It must not be allowed to – we need Nuremberg jury trials in every country. The cover-up doesn't get more obvious than appointing ultra-Zionist professor Philip Zelikow to oversee two dozen US virologists, public health officials, clinicians, former government officials and four American 'charitable foundations' to 'learn the lessons' of the 'Covid' debacle. The personnel will be those that created and perpetuated the 'Covid' lies while Zelikow is the former executive director of the 9/11 Commission who ensured that the truth about those attacks never came out and produced a report that must be among the most mendacious and manipulative documents ever written – see *The Trigger* for the detailed exposure of the almost unimaginable 9/11 story in which Sabbatians can be found at every level.

Passive no more

People are increasingly challenging the authorities with amazing numbers of people taking to the streets in London well beyond the ability of the Face-Nappies to stop them. Instead the Nappies choose situations away from the mass crowds to target, intimidate, and seek to promote the impression of 'violent protestors'. One such incident happened in London's Hyde Park. Hundreds of thousands walking through the streets in protest against 'Covid' fascism were ignored by the Cult-owned BBC and most of the rest of the mainstream media, but they delighted in reporting how police were injured in 'clashes with protestors'. The truth was that a group of people gathered in Hyde Park at the end of one march when most had gone home and they were peacefully having a good time with music and chat. Face-Nappies who couldn't deal with the full-march crowd then waded in with their batons and got more than they bargained for. Instead of just standing for this criminal brutality the crowd used their numerical superiority to push the Face-Nappies out of the

park. Eventually the Nappies turned and ran. Unfortunately two or three idiots in the crowd threw drink cans striking two officers which gave the media and the government the image they wanted to discredit the 99.9999 percent who were peaceful. The idiots walked straight into the trap and we must always be aware of potential agent provocateurs used by the authorities to discredit their targets.

This response from the crowd – the can people apart – must be a turning point when the public no longer stand by while the innocent are arrested and brutally attacked by the Face-Nappies. That doesn't mean to be violent, that's the last thing we need. We'll leave the violence to the Face-Nappies and government. But it does mean that when the Face-Nappies use violence against peaceful people the numerical superiority is employed to stop them and make citizen's arrests or Common Law arrests for a breach of the peace. The time for being passive in the face of fascism is over.

We are the many, they are the few, and we need to make that count before there is no freedom left and our children and grandchildren face an ongoing fascist nightmare.

COME ON PEOPLE – IT'S TIME.

One final thought …

The power of love
A force from above
Cleaning my soul
Flame on burn desire
Love with tongues of fire
Purge the soul
Make love your goal

I'll protect you from the hooded claw
Keep the vampires from your door
When the chips are down I'll be around
With my undying, death-defying
Love for you

Envy will hurt itself
Let yourself be beautiful
Sparkling love, flowers
And pearls and pretty girls
Love is like an energy
Rushin' rushin' inside of me

This time we go sublime
Lovers entwine, divine, divine,
Love is danger, love is pleasure
Love is pure – the only treasure

I'm so in love with you
Purge the soul
Make love your goal

The power of love
A force from above
Cleaning my soul
The power of love
A force from above
A sky-scraping dove

Flame on burn desire
Love with tongues of fire
Purge the soul
Make love your goal

Frankie Goes To Hollywood

APPENDIX

Cowan-Kaufman-Morell Statement on Virus Isolation (SOVI)

Isolation: The action of isolating; the fact or condition of being isolated or standing alone; separation from other things or persons; solitariness
Oxford English Dictionary

The controversy over whether the SARS-CoV-2 virus has ever been isolated or purified continues. However, using the above definition, common sense, the laws of logic and the dictates of science, any unbiased person must come to the conclusion that the SARS-CoV-2 virus has never been isolated or purified. As a result, no confirmation of the virus' existence can be found. The logical, common sense, and scientific consequences of this fact are:

- the structure and composition of something not shown to exist can't be known, including the presence, structure, and function of any hypothetical spike or other proteins;
- the genetic sequence of something that has never been found can't be known;
- "variants" of something that hasn't been shown to exist can't be known;
- it's impossible to demonstrate that SARS-CoV-2 causes a disease called Covid-19.

In as concise terms as possible, here's the proper way to isolate, characterize and demonstrate a new virus. First, one takes samples (blood, sputum, secretions) from many people (e.g. 500) with symptoms which are unique and specific enough to characterize an illness. Without mixing these samples with ANY tissue or products that also contain genetic material, the virologist macerates, filters and ultracentrifuges i.e. *purifies* the specimen. This common virology technique, done for decades to isolate bacteriophages[1] and so-called giant viruses in every virology lab, then allows the virologist to demonstrate with electron microscopy thousands of identically sized and shaped particles. These particles are the isolated and purified virus.

These identical particles are then checked for uniformity by physical and/or microscopic techniques. Once the purity is determined, the particles may be further characterized. This would include examining the structure, morphology, and chemical composition of the particles. Next, their genetic makeup is characterized by extracting the genetic material directly from the purified particles and using genetic-sequencing techniques, such as Sanger sequencing, that have also been around for decades. Then one does an analysis to confirm that these uniform particles are exogenous (outside) in origin as a virus is conceptualized to be, and not the normal breakdown products of dead and dying tissues.[2] (As of May 2020, we know that virologists have no way to determine whether the particles they're seeing are viruses or just normal breakdown products of dead and dying tissues.)[3]

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1 Isolation, characterization and analysis of bacteriophages from the haloalkaline lake Elmenteita, KenyaJuliah Khayeli Akhwale et al, PLOS One, Published: April 25, 2019. https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0215734 – accessed 2/15/21

2 "Extracellular Vesicles Derived From Apoptotic Cells: An Essential Link Between Death and Regeneration," Maojiao Li1 et al, Frontiers in Cell and Developmental Biology, 2020 October 2. https://www.frontiersin.org/articles/10.3389/fcell.2020.573511/full – accessed 2/15/21

3 "The Role of Extraellular Vesicles as Allies of HIV, HCV and SARS Viruses," Flavia Giannessi, et al, Viruses, 2020 May

If we have come this far then we have fully isolated, characterized, and genetically sequenced an exogenous virus particle. However, we still have to show it is causally related to a disease. This is carried out by exposing a group of healthy subjects (animals are usually used) to this isolated, purified virus in the manner in which the disease is thought to be transmitted. If the animals get sick with the same disease, as confirmed by clinical and autopsy findings, one has now shown that the virus actually causes a disease. This demonstrates infectivity and transmission of an infectious agent.

None of these steps has even been attempted with the SARS-CoV-2 virus, nor have all these steps been successfully performed for any so-called pathogenic virus. Our research indicates that a single study showing these steps does not exist in the medical literature.

Instead, since 1954, virologists have taken unpurified samples from a relatively few people, often less than ten, with a similar disease. They then minimally process this sample and inoculate this unpurified sample onto tissue culture containing usually four to six other types of material – all of which contain identical genetic material as to what is called a "virus." The tissue culture is starved and poisoned and naturally disintegrates into many types of particles, some of which contain genetic material. Against all common sense, logic, use of the English language and scientific integrity, this process is called "virus isolation." This brew containing fragments of genetic material from many sources is then subjected to genetic analysis, which then creates in a computer-simulation process the alleged sequence of the alleged virus, a so called in silico genome. At no time is an actual virus confirmed by electron microscopy. At no time is a genome extracted and sequenced from an actual virus. This is scientific fraud.

The observation that the unpurified specimen — inoculated onto tissue culture along with toxic antibiotics, bovine fetal tissue, amniotic fluid and other tissues — destroys the kidney tissue onto which it is inoculated is given as evidence of the virus' existence and pathogenicity. This is scientific fraud.

From now on, when anyone gives you a paper that suggests the SARS-CoV-2 virus has been isolated, please check the methods sections. If the researchers used Vero cells or any other culture method, you know that their process was not isolation. You will hear the following excuses for why actual isolation isn't done:

1. There were not enough virus particles found in samples from patients to analyze.

2. Viruses are intracellular parasites; they can't be found outside the cell in this manner.

If No. 1 is correct, and we can't find the virus in the sputum of sick people, then on what evidence do we think the virus is dangerous or even lethal? If No. 2 is correct, then how is the virus spread from person to person? We are told it emerges from the cell to infect others. Then why isn't it possible to find it?

Finally, questioning these virology techniques and conclusions is not some distraction or divisive issue. Shining the light on this truth is essential to stop this terrible fraud that humanity is confronting. For, as we now know, if the virus has never been isolated, sequenced or shown to cause illness, if the virus is imaginary, then why are we wearing masks, social distancing and putting the whole world into prison?

Finally, if pathogenic viruses don't exist, then what is going into those injectable devices erroneously called "vaccines," and what is their purpose? This scientific question is the most urgent and relevant one of our time.

We are correct. The SARS-CoV2 virus does not exist.

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Dr. Thomas Cowan, MD
Dr. Andrew Kaufman, MD

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Ickonic is something that has been a dream of mine for the last 5 years, growing up around alternative information I have always had a natural interest in what is going on in the World and what could I do to make it better.
Across the range of subjects and positions of influence occupied mainly by people who don't strive to make things better it's the Media that I have always found the most frustrating and fascinating. Mainly because if the Media did their Jobs properly then so much of the negative things happening in the World simply would not be able to happen, because they would be exposed within a heartbeat.
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Well I say enough, it's time for something different, a different kind of Media, where no one is off limits from exposing and investigating. All we're interested in at Ickonic is the truth of what is really going on in the World on whichever subject we're covering.
We hope you enjoy what we have created and take something away from the platform, we aim to deliver information that's informative and most importantly self-empowering, you're not a little person, you're part of something much bigger than that and its time we as a collective race began to understand that and look to the future as ours to take.

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Jaymie Icke - Founder Ickonic Alternative Media.

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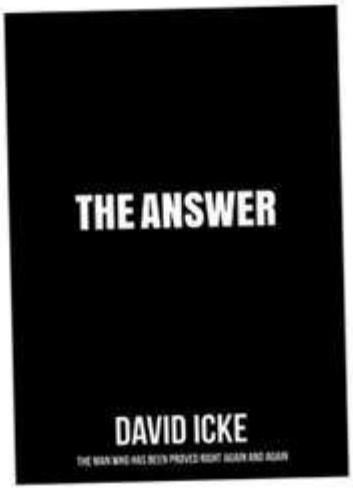

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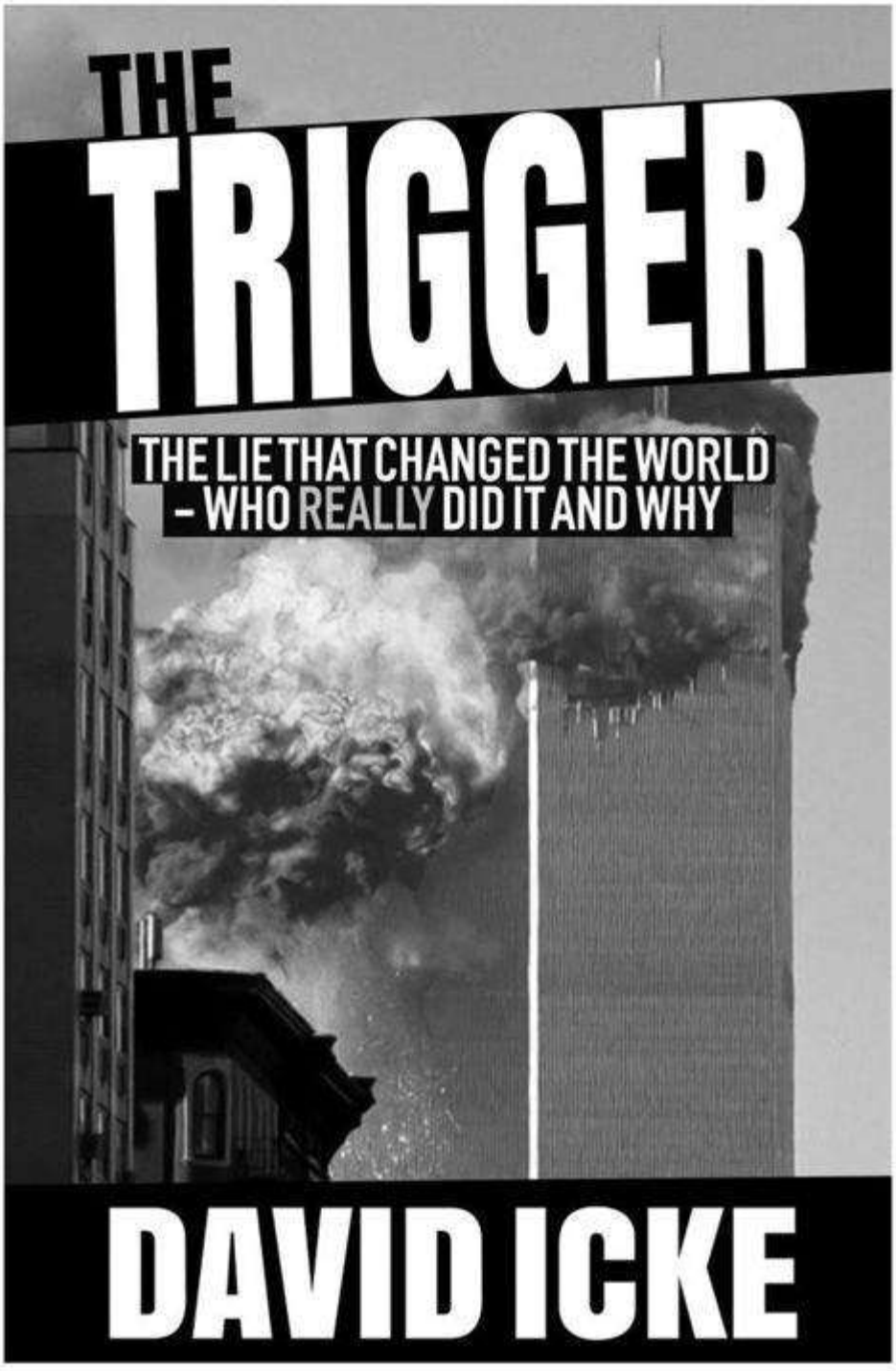
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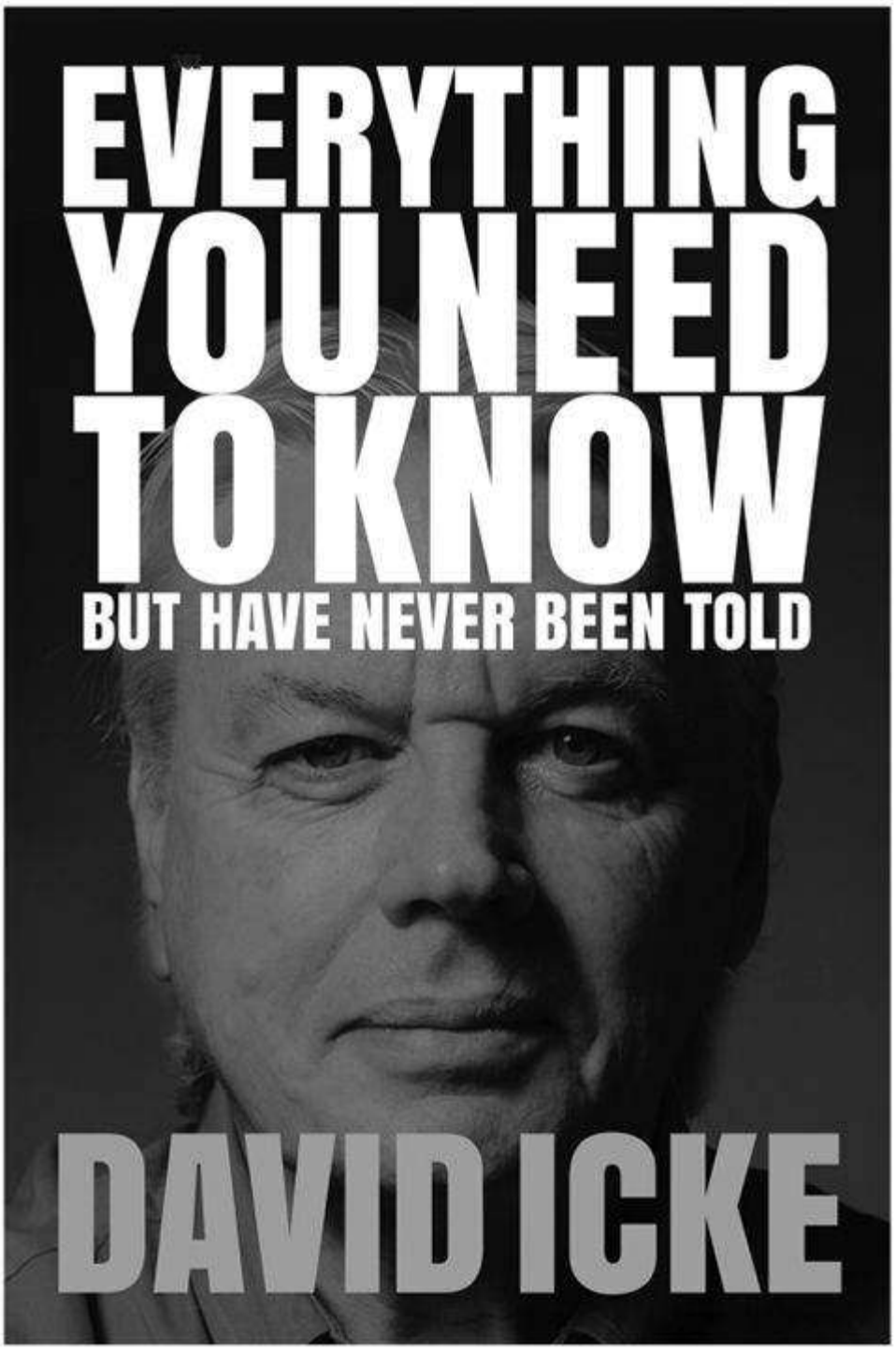
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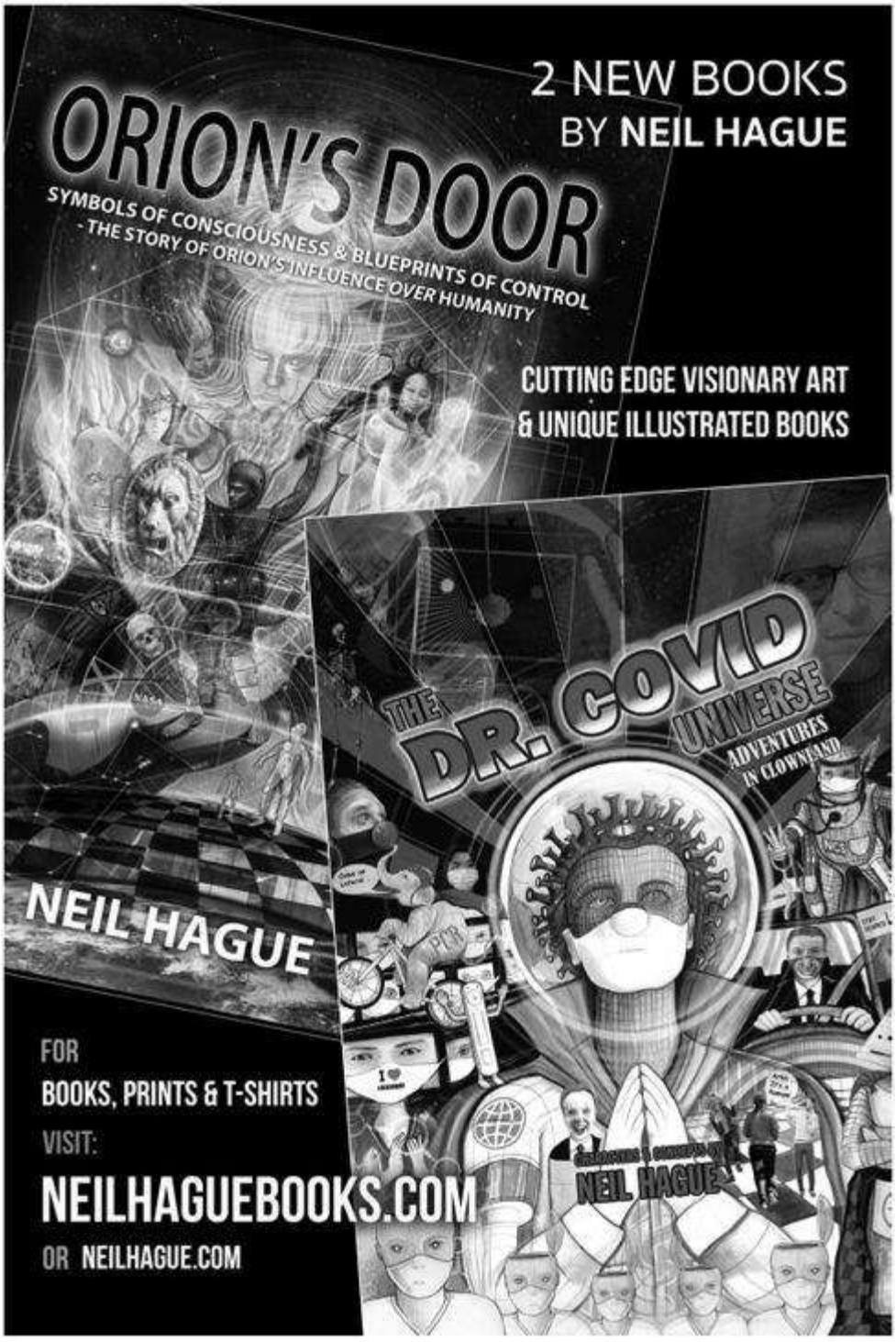
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